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Statements of goals and policies for the growth and development of the University of Northern Iowa are established. Data are presented concerning the utilization and condition of space, enrollment, interdisciplinary registration crossover, and academic program, as well as student and faculty activities. Estimates of space and facilities required to satisfy the aims of the university are established. Problems related to deficiencies in space and environment, and other obstacles in the path of implementation of the goals are identified. Four alternative development concepts are presented. (FS)

EDO 32714

PROGRAM SUMMARY
AND
ALTERNATIVE DEVELOPMENT CONCEPTS

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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UNIVERSITY OF NORTHERN IOWA

COMPREHENSIVE CAMPUS PLAN PHASE 1

DECEMBER 1967

EF 002 856

CAUDILL ROWLETT SCOTT
HOUSTON NEW YORK

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INTRODUCTION

This report contains a summary of the major goals and policies, the programmed space requirements for 15,000 students, and alternative concepts for physical development of the university at the 15,000-student level. The derivation of these concepts concludes Phase 1 of the Comprehensive Campus Plan.

Five basic tasks accomplished during the Programming Phase are:

ESTABLISH AIMS

Statements of goals and policies for its growth and development have been established by the university.

COLLECT AND ANALYZE FACTS

Data on the utilization and condition of space, enrollment, interdisciplinary registration crossover, academic program, and student and faculty activities have been collected and analyzed. This analysis helped in the determination of certain goals and policies, and in the establishment of precepts for program and plan development.

DETERMINE NEEDS

Based on the goals and policies outlined by the university and the study and analysis of elements in the preceding paragraph, the space and facilities required to satisfy the aims of the university have been estimated.

STATE THE PROBLEM

Having determined the needs of the university both in terms of aims and space requirements, substantial problems have been determined. Some of these problems are the deficiencies in space, environmental deficiencies and other obstacles in the path of implementation of the goals.

FIND AND DEVELOP CONCEPTS

Four alternative development concepts are presented in this report. Each of these would, in different ways, fulfill the aims and needs and create a direction for development of an optimum learning environment.

This report is a synopsis of the material developed during this phase. For complete background and detailed information, reference can be made to the following documents:

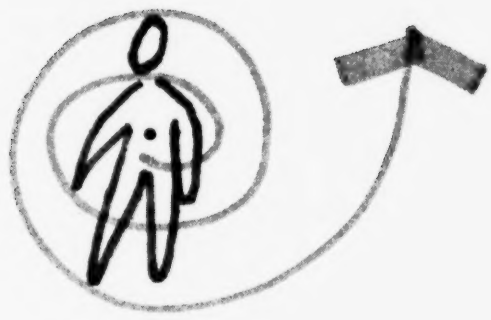
A PROGRESS REPORT TO THE UNIVERSITY AND THE BOARD OF REGENTS, August 11, 1967. Complete summary of student, faculty and administrative questionnaires, and methodology used for space estimates.

SPACE REQUIREMENTS FOR 15,000 STUDENTS – University of Northern Iowa, November 1967. Complete goals and policies statements and detailed breakdown of space requirements.

COMPUTER REPORTS: Existing and projected crossover, space utilization studies, projected discipline teaching loads, and criteria and estimates of required space.

The program was studied in an effort to find various alternatives that would give direction to the overall development of the campus, and to provide a basis by which the administration could reach decisions regarding the location of physical plant improvements and the most desirable functional relationships between the various components of the university. The four concepts that evolved during this study represent basic ideas for that development. The administration must decide which of the concepts most reflects the goals and policies of the institution

Following the selection of a concept, the campus plan will be developed.



stress the importance and dignity of the INDIVIDUAL

GOALS AND POLICIES

The following statements express the goals and policies of the university with respect to the academic program and total university development. These statements were developed from interviews and questionnaires with administration, faculty, and students.

Although the following is not a complete documentation of goal and policy statements formulated during the project, these are the ones which have given major direction to the development concepts.

ROLE AND SCOPE

The role and scope of the university is outlined in the following legislation passed by the 1967 General Assembly of the State of Iowa:

> "The university shall offer undergraduate and graduate courses of instruction, conduct research and provide extension and other public services in the area of its competence to facilitate the social, cultural and economic development of Iowa. Its primary responsibility shall be to prepare teachers and other educational personnel for schools, colleges and university and to carry out research and provide consultative and other services for the improvement of education throughout the state. In addition, it shall conduct programs of instruction, research and service in the liqeral and vocational arts and sciences and will offer such other educational programs as the State Board of Regents may from time to time approve."

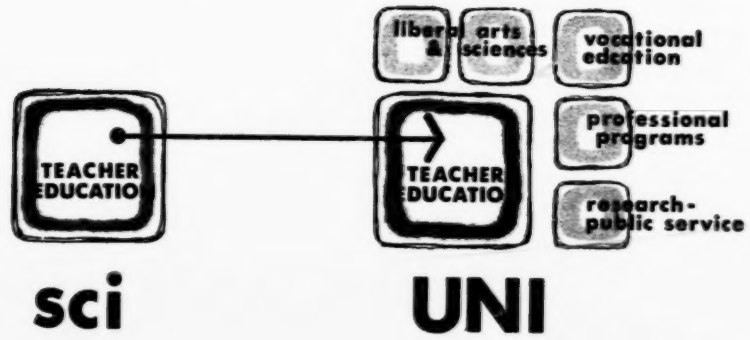
GROWTH

It is anticipated that the university will grow to 15,000 students, at which time enrollment would level off. The plan should, however, provide outlets for growth beyond the 15,000-student level.

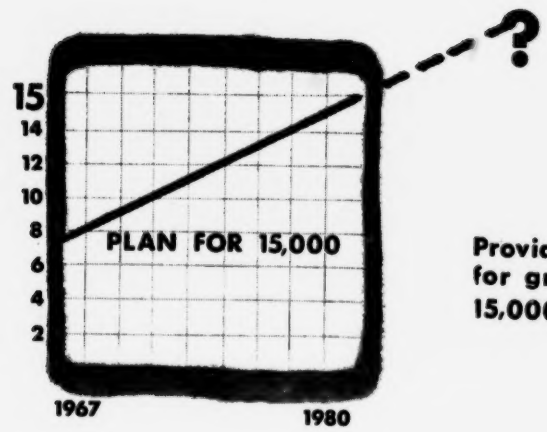
ACADEMIC DEVELOPMENT

In the initial stage, the academic organization will consist of four colleges and a graduate school; however, provisions must be made for an eventual increase in the number of colleges. The initial four colleges are Education, Fine Arts and Humanities, Business and Behavorial Sciences, and Natural Sciences.

Role and Scope

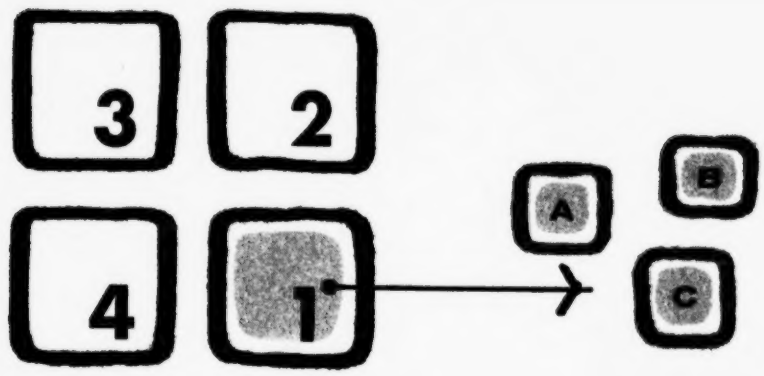


Growth



Provide outlets for growth beyond 15,000

Academic Development



INSTRUCTION

There will be increased use and application of electronic instructional media. However, the student/faculty contact should be retained and broadened by seeking a balance in small and large class sizes and the planning of facilities that will encourage both intellectual and social interaction.

With regard to independent study, expectations are for an intensification of what now exists, including individual carrels and small study rooms, microfilm stations and individual listening equipment in the library, lounges and carrels in the residence halls, and a variety of specialized laboratories in various scientific fields.

Some large lecture sections must be continued and it is likely that there will be a higher percentage of such classes. However, they must not become the pattern of instruction. Wide variance in class size should be expected to continue.

NEW COURSES AND PROGRAMS

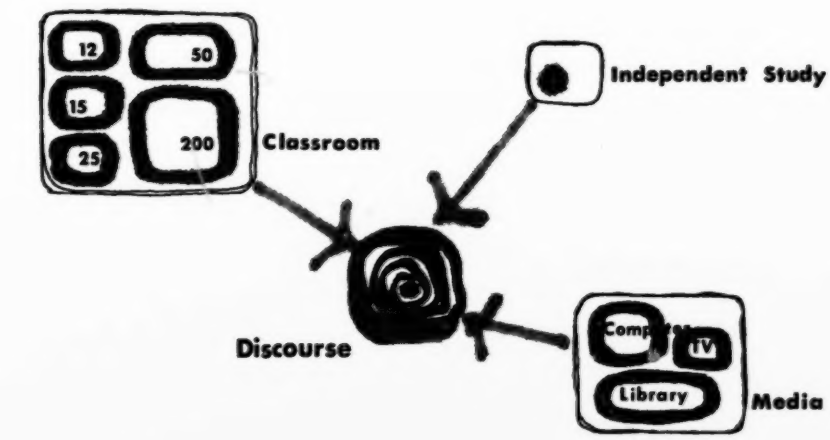
Nursing seems a possibility and may require a building. Some developments in technology seem possible but are indefinite. Social work seems a possibility but does not appear to call for much in the way of special facilities. Additional programs at the master's level seem inevitable, but they will be within areas already offered. The first addition will be in foreign languages. More specialized programs in business and in education are possible.

At this time, a definitive statement on new programs is impossible. Space should be available for ultimate expansion of all areas within the university.

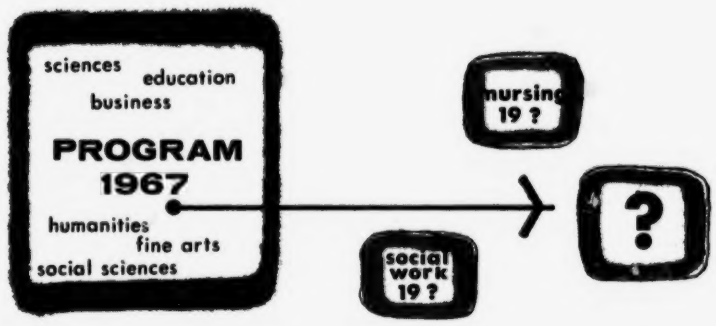
AFFINITIES

Primary affinities will be found among those departments which are affiliated within a specific college. Within colleges, particularly close affinity will be found between Physical Education for Men and Physical Education for Women, between the Department of Teaching and the Department of Education, between the disciplines which now make up the Department of Science (biology, chemistry, geology, physics and astronomy), and those which now make up the Department of Social Science (history, government, economics, sociology, anthropology and geography). Between colleges we may expect close relationships between the Departments of History and English in the offering of the general education humanities course, between music and drama, and between education and psychology. Teacher Education is, of course, a common objective of all departments and should result in close ties between the academic departments and those in professional education.

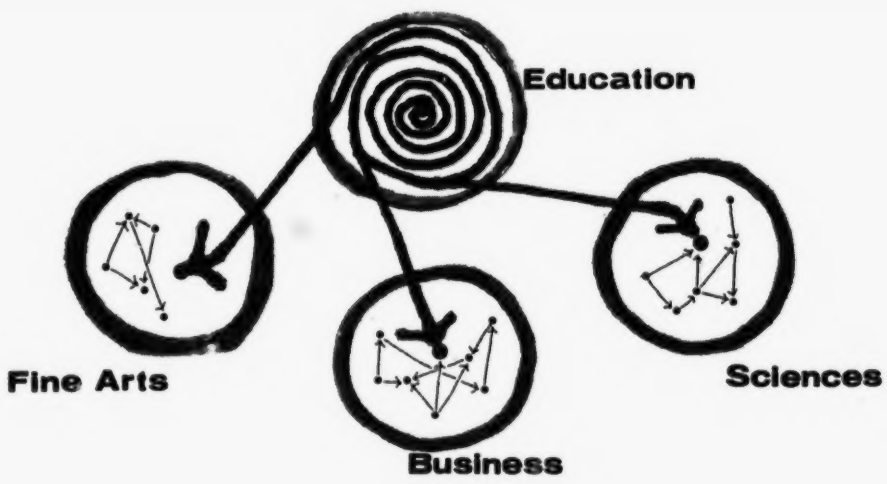
Instruction



New Programs



Affinities



RESEARCH

At this stage of development, a definitive outline of future research activities is difficult. Research will grow as a part of the academic program. However, because of an almost void program in the past, the areas of development and quantities of either staff or space are unpredictable. It is anticipated that new facilities and efforts of individual staff members will stimulate research activities. The policy of the university will be to encourage research in all areas.

Priorities for research will be 1) academic, 2) institutional, and 3) contract. Both institutional and contract could grow to equal academic.

CAMPUS LIFE

A mixture of identification with specific disciplines and identification with broader units including the colleges and the general university is desirable. Hence, modest lounges and study facilities should be provided in buildings serving the various disciplines. The new Student Union should be expanded considerably.

Major instructional buildings should have departmentally-oriented lounges and rooms of a type to encourage discussions (of a specialized nature and which have somewhat localized interest). These can serve a function of relating faculty to students and may be considered to augment, rather than compete with, union activity.

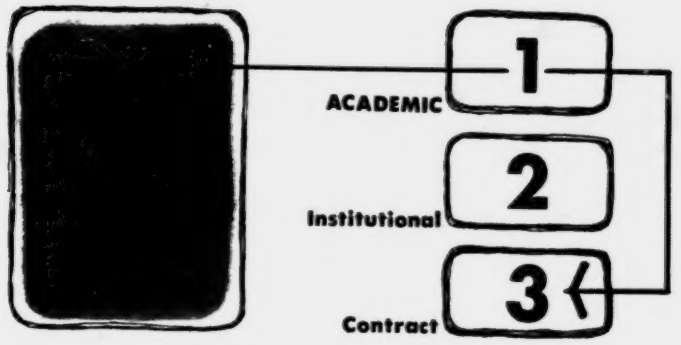
Discussion groups will be extremely important but can be handled with the facilities which are designed essentially for instruction, provided the union, as expanded, includes a sizable amount of auditorium- and conference-type space.

Opportunities for recreation should be made available to all students and faculty.

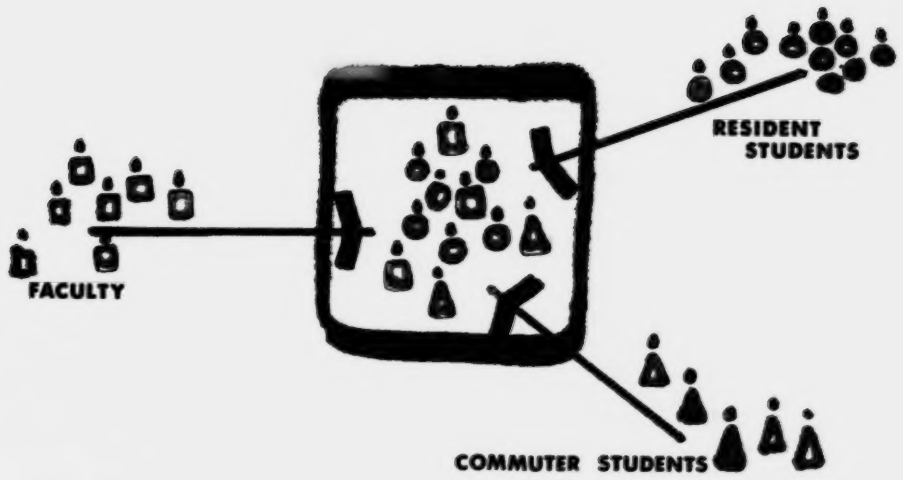
COMMUNITY

The university should develop as one of the primary community centers to the Waterloo—Cedar Falls area. This development will have education as its focus in the form of a high quality instructional program, continuing education, and in the cultural, social, and sports events which are generated by the university.

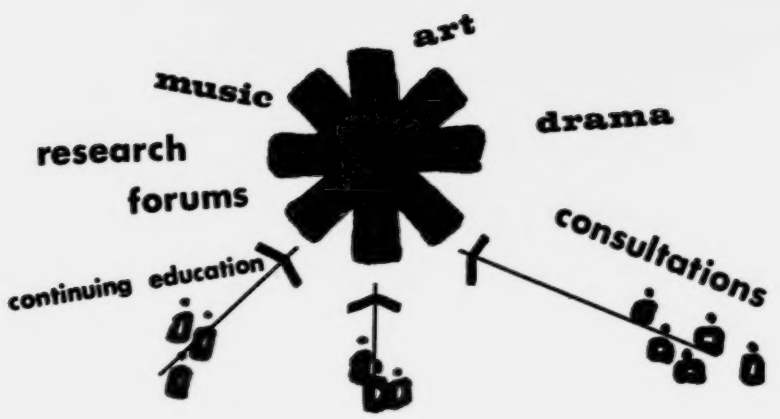
Research



Campus Life



Community



SPACE ESTIMATION CRITERIA: GOALS AND POLICIES

The following goals and policies statements are related directly to the establishment of criteria for the estimating of space or the planning of facilities and site development.

LIBRARY

The university is committed to a large central library, containing 800,000 to 1,000,000 volumes and the seating stations for 25 to 30 percent of the total enrollment at the 15,000-student level. Developments in such areas as computer access to other research collections, and photofacsmilie transmittal among libraries on a regional, and even national, basis, providing access to literally almost any collection, may make a permanent collection in excess of 1,000,000 unnecessary.

It may be anticipated that extensive automated and electronic equipment will be introduced into the library during the next decade or two.

With a concentrated academic center on campus, a proliferation of departmental or divisional libraries is unlikely. There are now some small departmental collections of reference materials and periodicals. Although it is intended to centralize library functions, several of these departmental libraries will be further augmented. When the graduate programs of the university reach major proportions and the central library approaches the million-volume level, it is likely that serious thought will be given to the establishment of a separate undergraduate library of from 50,000 to 100,000 volumes.

EDUCATIONAL MEDIA

It is anticipated that there will continue to be a centralized audio-visual media material and production service, administered by the College of Education, with a substantial amount of equipment permanently loaned to the various departments scattered throughout the campus. It is assumed that television production services, both open- and closed-circuit, will be developed in a separate television facility. New academic buildings should be linked to the centers of closed-circuit television. All departments will use audio-visual services and materials and almost all of them will use television.

A separate computer center should be developed for instruction and research. Duplicating services generally will continue to be centralized.

HOUSING

Single-Student Housing

The present policy is to house a high percentage of women undergraduates (75 to 80 percent) and a smaller proportion of men (to percent). Currently, housing for 70 percent of the full-time equivalent student body is provided on campus. In view of present student attitudes, it is possible that once the Towers are completed the need for additional residence halls may diminish. Also, new developments in the private sector of the economy, such as the condominium being built near the campus, may alter future on-campus housing development.

The philosophy of the university is to operate, support and organize single-student housing to aid in the continuing intellectual growth of the student. Although the exact type and amount of future single-student housing needed is an unknown, space for additional housing should be reserved, possibly for 60 to 70 percent of the undergraduate population. Housing should also be provided for 500 graduate students.

Married-Student Housing

The following estimate of space needed for married-student housing was projected on the basis of the administration's policy toward married-student housing and the policy recommendations of the Committee on Married-Student Housing.

For planning purposes, a goal has been set to provide from 800 to 1000 units of housing at the 15,000-student level.

Although the exact type and number have not yet been determined by the committee, it and the administration have recommended that the units be of a wide variety of design.

STUDENT UNION

The university currently has the first stage of a Student Center under construction. Expansion of the student union should be planned to include more meeting rooms, bookstore, bowling, billiards, and other activities.

AUDITORIA

A committee is currently studying auditoria requirements of the university. The following facilities are assumed to be probable future needs:

Arena	10,000 to 12,000 seats
Hall for the Performing Arts	2,000 to 2,500
Theater	700
Multi-purpose Lecture Hall	700

PARKING

Parking will be made available for students, staff and campus visitors. Storage parking will be located on the periphery of the campus for students in residence halls, parking areas for commuter students will be at points where access ways enter the campus, and parking for staff and handicapped people will be adjacent to instructional areas. Parking should be planned near those facilities which will attract visitors.

VEHICULAR CIRCULATION

A pedestrian campus should be planned. Pending agreement between the university and the city, any of the campus and surrounding city streets may be closed, realigned, relocated or modified.

BUILDING OBSOLESCENCE

The following buildings and facilities should be considered obsolete and should be removed or replaced:

	MAXIMUM LIFE
OLD ADMINISTRATION BUILDING	10 years
GILCHRIST HALL	10
AUDITORIUM BUILDING	15
LAUNDRY BUILDING	2-5
OLD HOSPITAL	5
CARRIAGE HOUSE	1
DEAN'S HOUSE	2
WOMEN'S GYM	8
SUNSET VILLAGE (married-student housing)	2-4
KYTC HOUSE	2

Other buildings which may be either removed or replaced, depending on need for land or program alternatives, are:

PRESIDENT'S HOUSE
HOME MANAGEMENT HOUSE

EXISTING BUILDING USE

The Library, Music, Health Service, the new science facility, the Campus School, the new Union, and the residence hall food service areas should be considered as fixed. Business and Business Education should probably be considered fixed for several years.

Moving the heating and electric plant would be expensive, but it will undoubtedly be expanded regularly as the campus grows. A feasibility study should be made on relocation. The new shops building should also be considered fixed.

The following buildings should be considered for another use, either on a temporary or permanent basis:

WOMEN'S POOL	RECREATION
MEN'S GYMNASIUM	RECREATION OR OTHER INSTRUCTIONAL USE
BAKER HALL	FUTURE USE OR CONVERSION WILL REQUIRE ADDITIONAL STUDY

PARKING GARAGES

The Regents may borrow money for self-liquidating projects, including multi-level parking structures. How to charge the users enough to amortize the construction costs would be a problem. There is a possibility of using some student fee money to pay for a part of such construction costs if the facilities are badly needed.

SACRED AREAS

No area need be considered sacred except possibly the area immediately surrounding the Campanile, and the mall from the Campanile to the Men's Gym. Open space, such as on the College Street side of the campus, should be retained where possible.

NEIGHBORHOOD

The plan should be concerned with the environment created by the surrounding neighborhood and community. Neighborhood developments should complement and supplement university development.

ESTIMATED SPACE REQUIREMENTS FOR 15,000 STUDENTS

The following tables summarize the estimated space needs at the 15,000-student level. All figures equal net square feet required for stated functions, and do not include allowance for stairs, halls, toilets, mechanical rooms, etc.

Instructional Space

	LECTURE	LABORATORY	OFFICES	SPECIAL FACILITIES	TOTAL
Accounting	3,828	0	4,111	0	7,939
Marketing	3,918	0	4,313	0	8,231
Secretarial	1,297	3,413	1,594	0	6,304
Business	11,476	0	8,591	6,450	26,517
Psychology	4,096	11,505	3,821	7,890	27,312
Education	12,985	20,086	13,518	57,770	104,359
Safety Education	384	416	345	200	1,345
Home Economics	2,189	11,251	2,165	6,060	21,665
Industrial Arts	3,693	16,294	5,164	13,280	38,431
Library Science	832	1,436	1,309	0	3,577
Health & Physical Education	1,502	0	2,308	0	3,810
Physical Education—Men	2,734	154,098	4,159	2,600	163,591
Physical Education—Women	2,692	136,643	3,510	560	144,245
Speech	10,477	617	7,967	25,500	44,561
Music	7,816	5,229	7,169	17,450	37,664
Art	6,186	35,235	8,520	3,360	53,301
English	11,194	0	8,788	1,950	21,932
Religion	939	0	1,535	0	2,474
Philosophy	1,457	0	1,820	0	3,277
Journalism	0	414	142	300	856
Humanities	19,118	0	9,996	0	29,114
Languages	60	75	476	400	1,011
French	1,869	2,293	2,070	0	6,259
German	872	972	773	0	2,617
Latin	287	212	142	0	641
Russian	334	249	285	0	868
Spanish	2,317	2,804	2,558	0	7,679
Mathematics	9,323	0	5,194	450	14,967
Science	356	784	345	10,000	11,485
Biology	2,170	11,851	3,278	20,300	38,139
Chemistry	1,604	18,059	2,427	880	22,970
Earth Science	835	5,124	1,594	6,280	13,833
Physics	1,810	15,390	2,713	1,100	21,013
Social Science	1,361	0	630	400	2,391
Economics	2,786	827	2,427	800	6,840
Political Science	1,943	0	1,939	0	3,882
History	4,747	0	4,254	600	9,601
Geography	2,751	6,490	1,939	900	11,180
Sociology	2,299	0	3,177	0	5,476
	147,065	440,611	136,996	186,320	931,226

Support Facilities

BUILDINGS

Library	262,000 square feet
Educational Media	52,300
Single-Student Housing	911,000*
Married-Student Housing	635,000
Student Center	123,750
Auditoria	
ARENA	150,000
AUDITORIUM	70,000
Administration	98,000
Physical Plant	146,500

*Single-Student Housing: Additional area required

NON–BUILDING REQUIREMENTS

	ACRES
Men's Physical Education Fields	69.8
Women's Physical Education Fields	32.5
Parking	90
Arboretum	10+
Stadium	25
Golf Course	125

SPACE ANALYSIS

This table summarizes the total net instructional space required by the university at the 15,000-student enrollment level. The academic space requirement will be 910,992 net square feet.

	EXISTING	ESTIMATED NEED	DEFICIENCY
Lecture	45,735	147,065	107,330
Laboratory	156,061	460,845	304,784
Office	49,773	136,996	87,223
Special Facilities	27,731	186,320	158,589
	279,300	931,226	651,926
Space to be removed/ replaced	88,000		
Under Construction	68,000		
TOTAL DEFICIENCY	671,926 square feet		

ESTIMATE OF PARKING REQUIREMENTS AT THE 15,000-STUDENT LEVEL

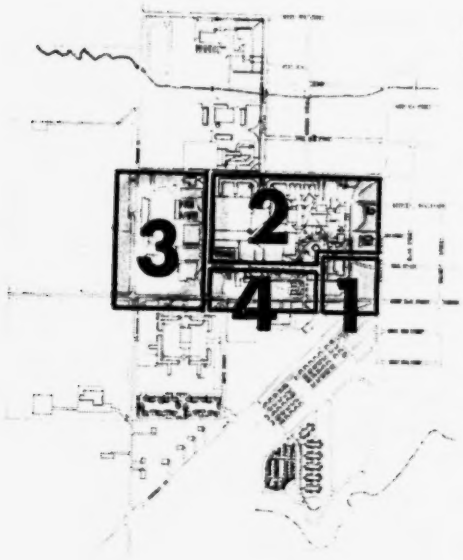
Policy

Parking will be made available to students, staff and campus visitors. Distribution of parking will be handled as to general need, such as space for residence hall storage parking and handicapped people adjacent to the instructional area. Visitor parking will be planned near the facilities which attract their interest most.

EXISTING INVENTORY		
Assigned —	Visitors	29
	Faculty & Staff	981
	Student	
Unassigned		533
		2,498

Current economic trends and the university's location in a rural state force high ratios in estimating the parking requirements at the 15,000-student level. Some consideration must be given to the possibility that married students will follow the national trend toward two-car families. Attempts have been made to incorporate these and other trends into the estimate of parking requirements at the 15,000-student level.

FACULTY & STAFF — 1,338	
Ratio, 1:1 @ 80% accumulation	1,070
STUDENTS	
Residence Hall — 9,450	
Ratio, 1:2 @ 100%	4,725
Married-Student Housing — 1,000	
Ratio, 1:1.5 @ 100%	1,500
Commuter — 4,500	
Ratio, 1:1.2 @ 70%	3,822
	11,117



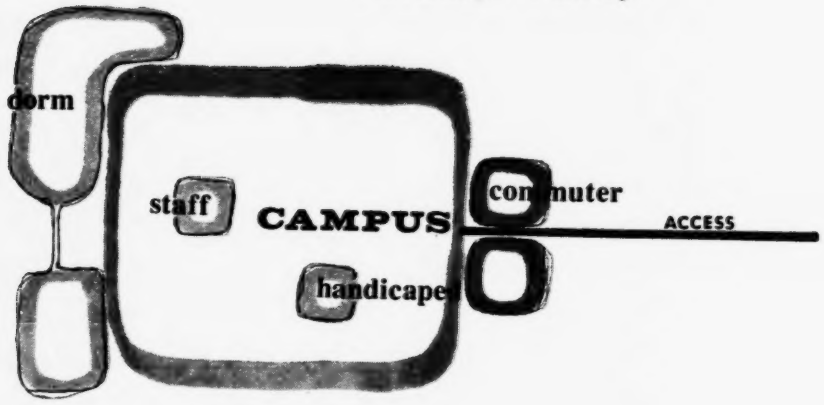
UNIVERSITY of NORTHERN IOWA

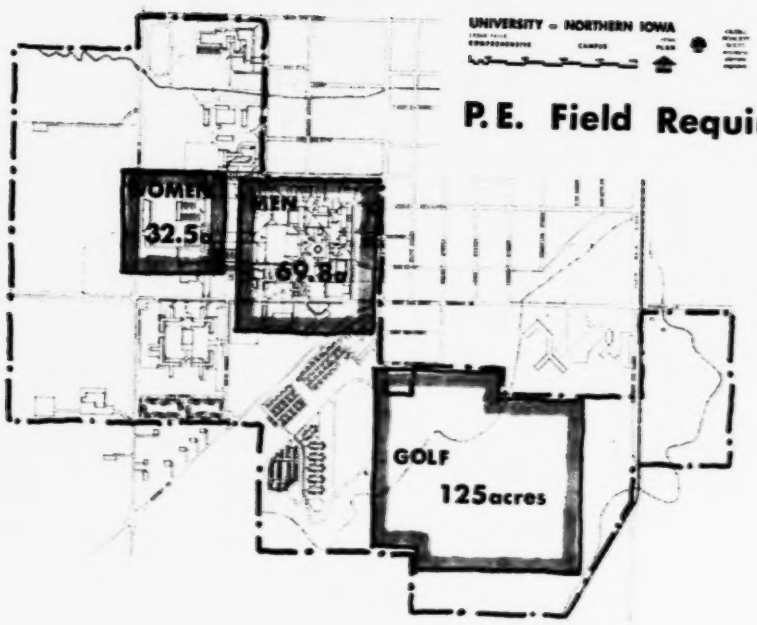
Parking Requirement

1 FACULTY
2 COMMUTER
3 RESIDENCE HALLS
4 MARRIED STUDENT HOUSING

→ 90 ACRES

Parking Policy





BACKGROUND

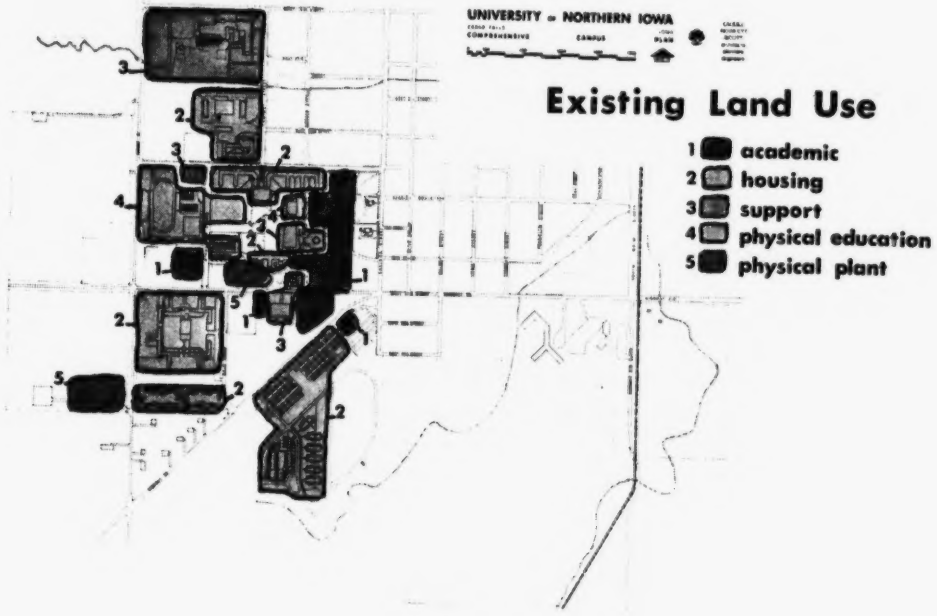
Existing Land Use

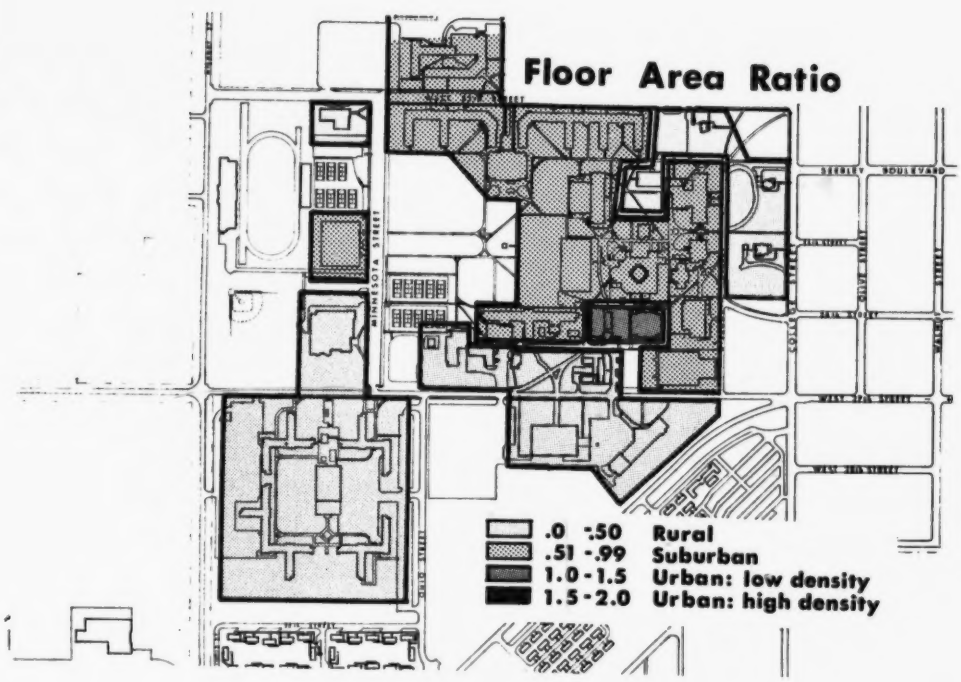
The university has only in recent years broken out of a rather compact, unified campus development. The academic area is, with the exception of Music, highly centralized and generally developed around a core of facilities consisting of the Library, Student Union and Administration Building. This academic support area is flanked on the north and south by housing, and on the west by Education. For convenience within the academic area, and for the close physical relationship of housing to academic and support, the existing arrangement is excellent. This land use, although good for a college of 5,000 students, will pose problems for a university of 15,000. Baker Hall, a dormitory, is in the middle of the academic area, and the Bartlett-Lawther dormitory complex forms a fairly solid barrier on the north. The heating plant, originally on the campus perimeter, is rapidly being surrounded by the academic and support facilities, resulting in a physical and esthetic barrier to campus development. Physical Education and Athletics occupy land that is optimum for future centralized development. The Union-Library complex is excellent from the standpoint of its relationship to existing land uses; however, growth may shift the academic center of the campus. These and other land use problems must be confronted as planning progresses.

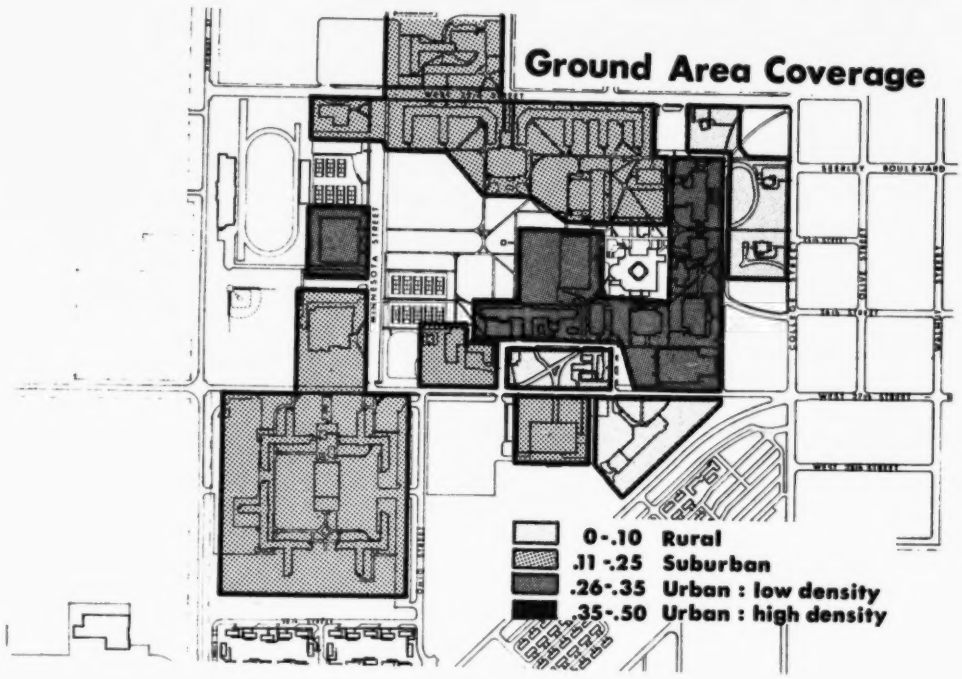
Existing Density – Floor Area Ratio

Floor Area Ratio and Ground Area Coverage, or the ratio of the gross square feet in a building or group of buildings to the site it occupies and the percent of the actual land area covered, are measures used to determine the relative density of the developed area. The patterns of these show 1) the efficiency at which available land is used for various purposes and 2) the general character of existing development. The general character indicates the differences between a spacious, almost rural and a more dense, urban environment. Although uses vary in density, a Floor Area Ratio of 0 to .50 is generally rural, .50 to 1.0 is suburban, 1.0 to 1.5 approaches an urban character, and 1.5 to 2.0 begins to take on the character of a dense urban area. Corresponding Ground Area Coverages are rural, 0 to .10; suburban, .10 to .25; urban, .25 to .35; and high-density urban, .35 to .50.

The developed areas of the university are generally in the lower density ranges. The presence of mostly low buildings results in a low Floor Area Ratio and a relatively high Ground Area Coverage. The existing Floor Area Ratio in the academic area is .41, and the Ground Area Coverage is .19. Both of these could be comfortably doubled and still maintain a good ratio of buildings to open space.


UNIVERSITY of NORTHERN IOWA
Existing Land Use
1 academic
2 housing
3 support
4 physical education
5 physical plant


Floor Area Ratio
.0 -.50 Rural
.51 -.99 Suburban
1.0 - 1.5 Urban: low density
1.5 - 2.0 Urban: high density


Ground Area Coverage
0 -.10 Rural
.11 -.25 Suburban
.26-.35 Urban : low density
.35-.50 Urban : high density

PEDESTRIAN CAMPUS

Ten-Minute Walking Circle

In planning the academic core and expansion of the academic and support facilities, the maximum walking distance possible in the ten-minute class break is an important consideration. Allowing time to exit and enter a building, the distance that can usually be traveled in ten minutes is 2200 feet. The diagram on the right shows that there are several of these ten-minute circles within the land area owned by the university. It also shows that the existing academic core easily fits into one.

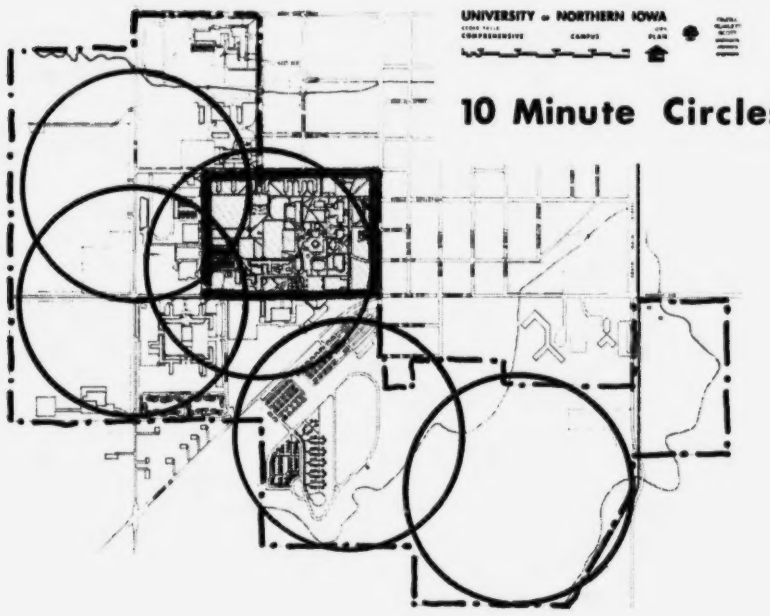
Should expansion of the academic core take place west of Highway 57 or south of Highway 58, it would almost immediately be within a second ten-minute circle, calling for a lengthening of the class break or meticulous class scheduling.

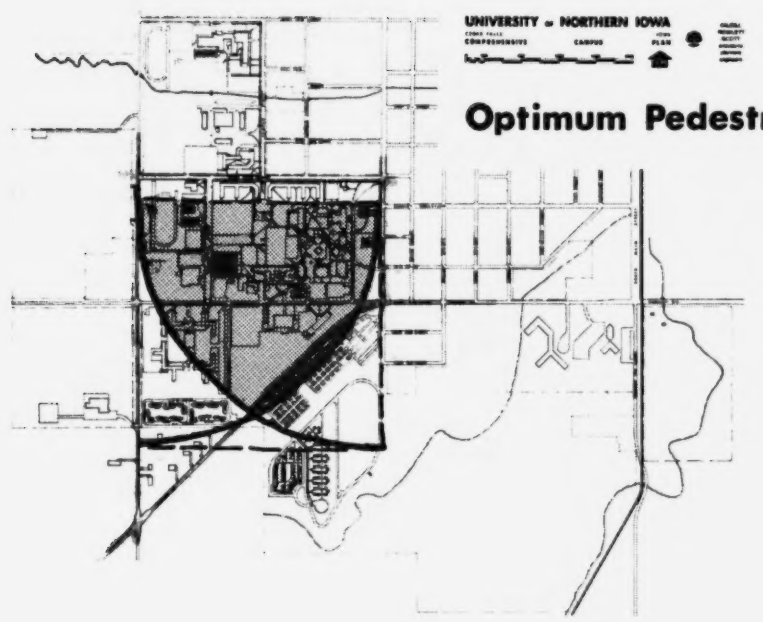
Optimum Academic Core Area

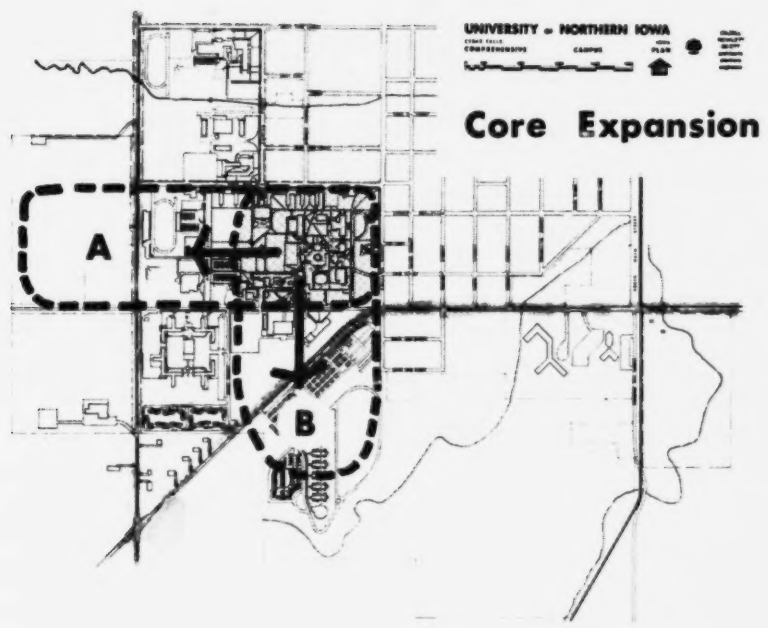
An optimum academic core would be that which encompasses an area in which all points are no more than ten minutes from any other. In terms of the existing campus, that area as shown on the right is an optimum core area.

Core Expansion

From a purely geographic viewpoint, there are but two directions in which expansion can take place. These are directly west or south, shown as A and B on the campus map. Expansion on the north is precluded by university housing and urban development. On the east, urban development is a barrier, and in the quadrant contiguous to both expansion areas, the Regents Dormitory complex prohibits expansion.


UNIVERSITY of NORTHERN IOWA
10 Minute Circles


UNIVERSITY of NORTHERN IOWA
Optimum Pedestrian Campus


UNIVERSITY of NORTHERN IOWA
Core Expansion
A
B

VEHICULAR CONSIDERATIONS

Access

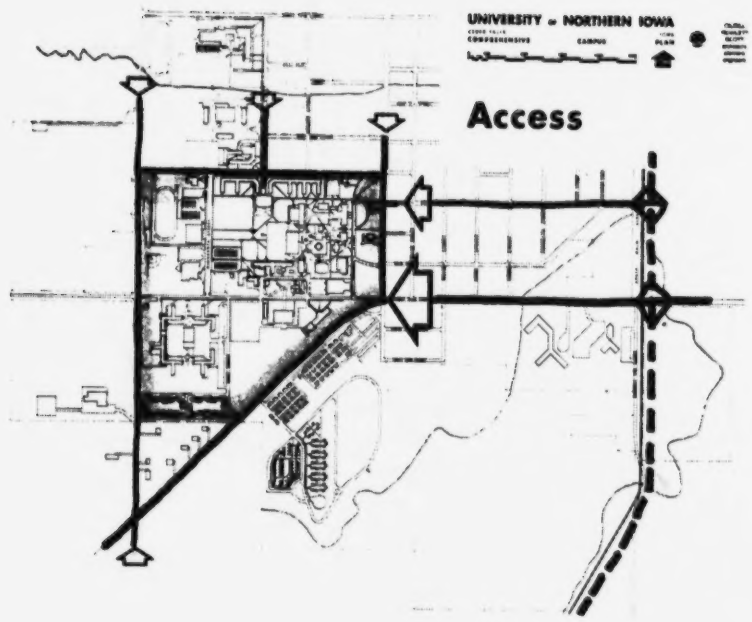
The choice of an access route is determined primarily by the geographical distribution of the population using the campus, the location of the various facilities on the campus, and the condition and convenience of the overall urban circulation system. Almost all of the Waterloo—Cedar Falls metropolitan area lies east of the campus, and the main route serving this area is Highway 58. It is, via this access that the largest volume of traffic comes to the campus. There is some filtering into the campus from the immediate Cedar Falls area. This is a small percent of the total. Although urban development can be anticipated south and west of the campus, indications are that the center of the metropolitan area will remain well to the east, and Highway 58, to be developed to a much higher standard, will continue to be the primary access corridor. Urban circulation plans include a freeway-type throughfare in the vicinity of Main Street. This facility will interchange with Highway 58 and Seerley Boulevard. This could make Seerley Boulevard a more important access way into the campus. It will temporarily end at Highway 57, and will create rather high traffic volumes on this highway until the freeway is extended west. Eventually, Highway 57 could become an important access way on a regional scale.

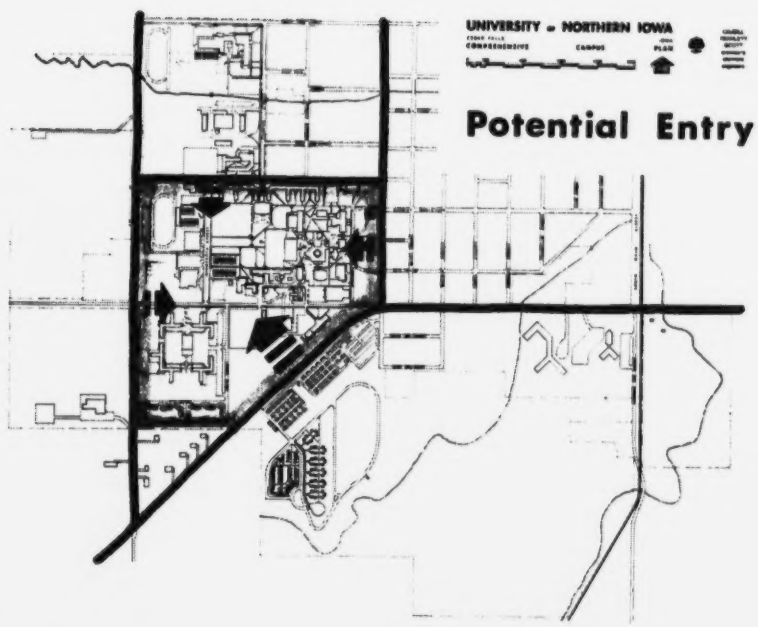
Potential Entry

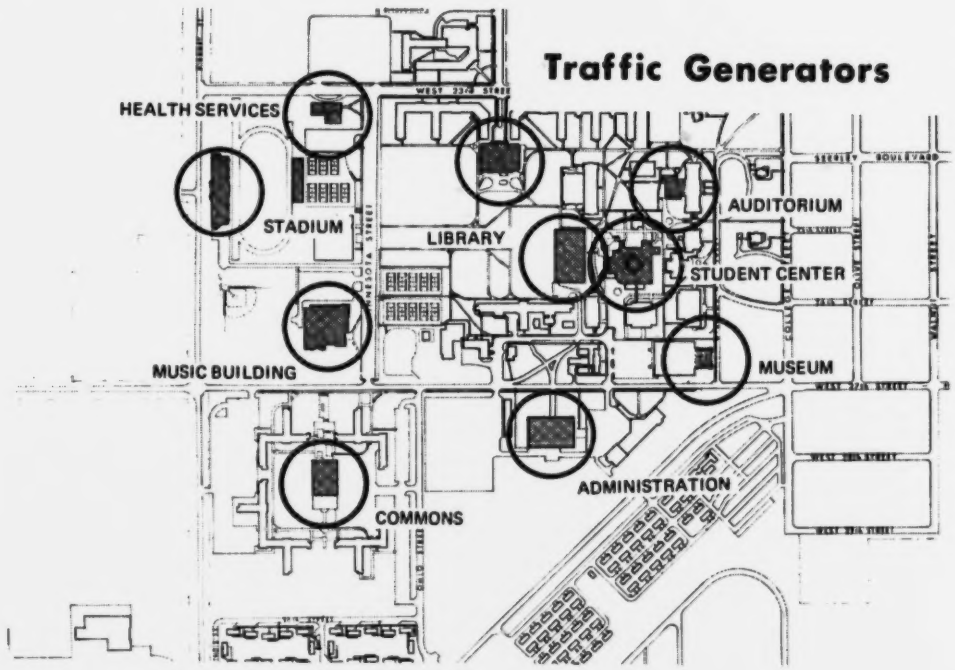
The actual decision relative to an entry will be determined by the pattern of access to the campus area, the location of the various components requiring direct access, and the desire on the part of the university to emphasize or identify a doorway into the university. Potential entry into the campus will exist from Highways 57 and 58, from College Street, and from West 23rd Street.

Automobile Traffic Generators

The campus map shows the existing major traffic generators. Some of these will be relocated as the campus expands; however, facilities such as the Student Union and Music Building will remain in their present location and will require some form of auto control, either in terms of drop-off areas or convenient parking. The auto access way is the most direct link between the campus and the community which depends upon the automobile for transit. The growth and location of facilities receiving a high degree of public contact should be accomplished in a manner that would minimize disection of the campus by streets.


UNIVERSITY of NORTHERN IOWA
Access


UNIVERSITY of NORTHERN IOWA
Potential Entry


Traffic Generators
HEALTH SERVICES
STADIUM
LIBRARY
AUDITORIUM
STUDENT CENTER
MUSIC BUILDING
MUSEUM
ADMINISTRATION
COMMONS

BARRIERS

Highly developed urban areas are absolute barriers to growth. The possibility of the university acquiring enough land for expansion in these areas is remote. Acquisition costs alone would be prohibitive, especially when undeveloped land is available adjacent to other areas of the campus. Highways 57 and 58 are restrictive barriers to growth. Both of these highways are destined to carry heavy traffic loads. Expansion across these highways is feasible; however, unless some type of physical connection is provided, the highways will restrict the free flow of pedestrian traffic and disrupt the continuity of the university as a whole. A highway division of some facilities such as those generally concentrated in the academic core, could form a psychological barrier detrimental to the objectives of the university.

COMMUNITY

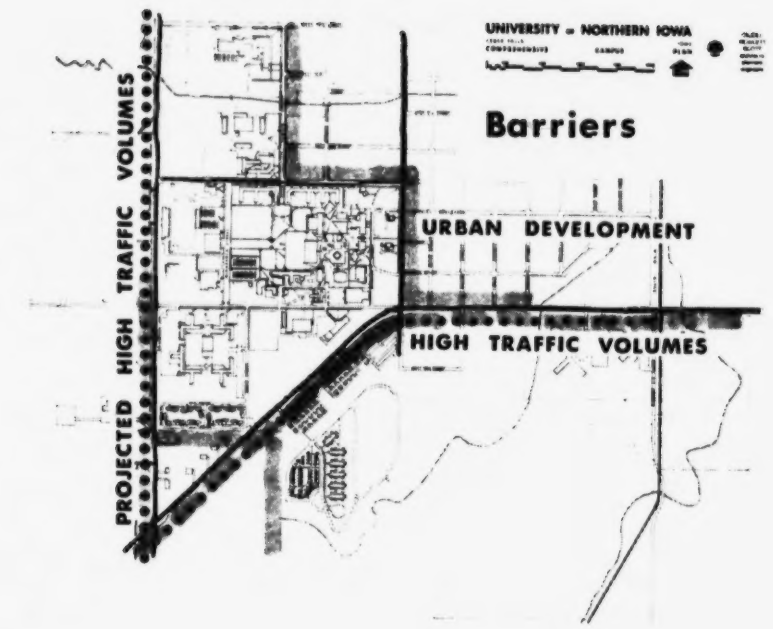
The university and its neighbors have a vested interest in the condition, development, and activity of the other. Planning should not stop at the university property line, but, through the development of common objectives and cooperation in fulfilling those objectives, will extend beyond the border on both sides. As the university and the community grow, consciousness of compatibility must exist between the two. The map on the right shows existing conditions. These conditions will change as the need for additional commercial, multi-family and single-family development is generated by the expanding university population. The university will serve as the educational and cultural focal point of the community.

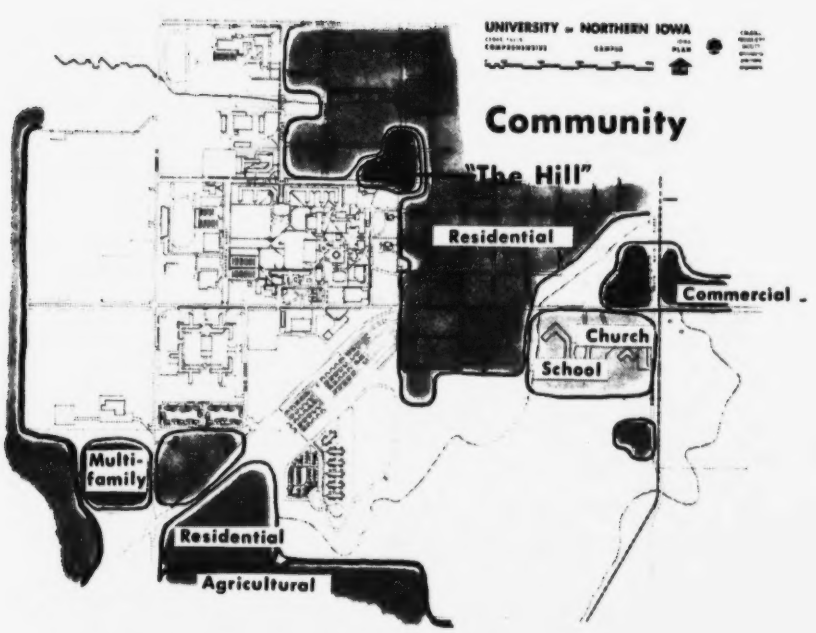
The community aspect of the plan will receive considerable emphasis during Phase 2 of the plan study. Each of the four concepts presented here would call for a different response in community planning.

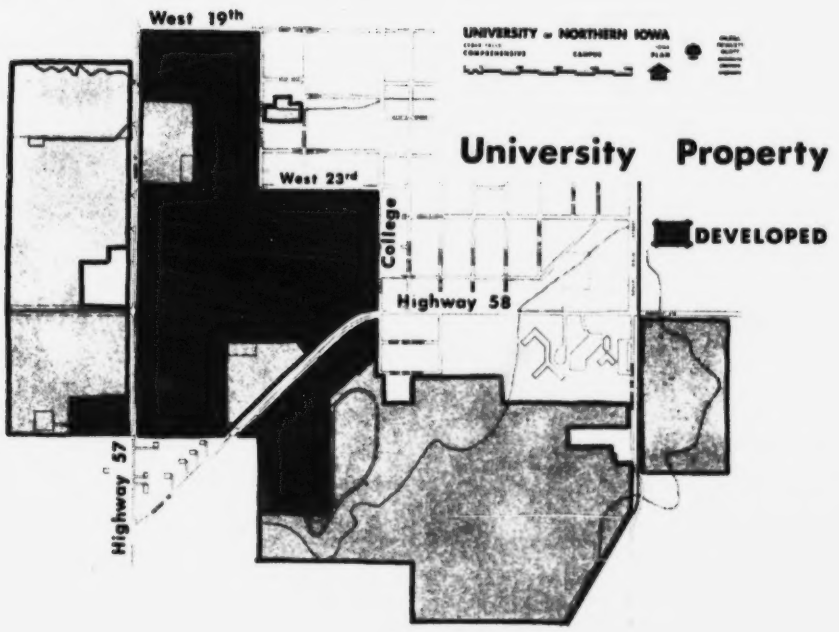
UNIVERSITY PROPERTY

The property owned by the university and available for development is approximately 550 acres. Excluding the temporary married-student housing and the golf course, only 150 acres are developed. Even within that area shown as developed, there are additional building sites. Also, building sites will be created within this area at such time that facilities are removed.

Of the 550 acres, two areas must be discounted as being available for the development of the program outlined in this report. These are the lab school and the existing single-student housing areas. Discounting these areas, there are then approximately 485 acres available for the development of the program outlined in this report.


UNIVERSITY of NORTHERN IOWA
Barriers
PROJECTED HIGH TRAFFIC VOLUMES
URBAN DEVELOPMENT
HIGH TRAFFIC VOLUMES


UNIVERSITY of NORTHERN IOWA
Community
"The Hill"
Residential
Commercial
Church
School
Multi-family
Residential
Agricultural


West 19th
UNIVERSITY of NORTHERN IOWA
University Property
DEVELOPED
West 23rd
College
Highway 58
Highway 57

DENSITY: REQUIRED LAND AREA

An initial step in the planning for future facilities is the determining of required land areas. This requirement is based on the maintenance of a desirable density for the various uses. In setting densities, allowances must be made for the existing buildings which may force maintenance of low densities. Densities which will permit expansion of the activity beyond present projections should be chosen. The densities selected for the development of the campus are underlined in the density matrix on the opposite page. In calculating the required area, a density range was selected to allow flexibility in planning.

The amount of land area required for buildings will vary from 115 acres at the higher density to 193 acres at a lower density. The following table shows the breakdown of these densities as they relate to required land uses.

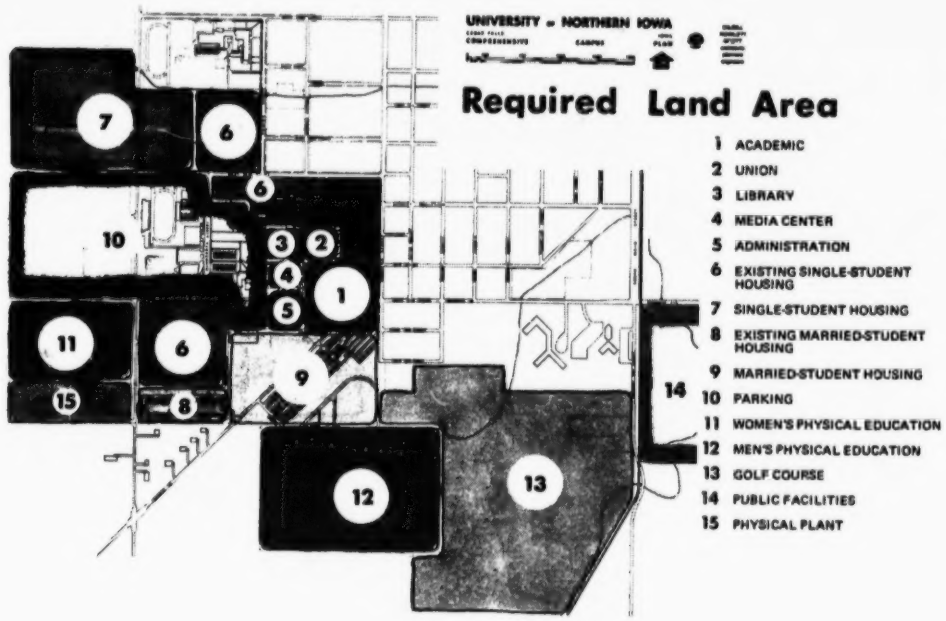
	Required Acres	
	Low	High
CORE FACILITIES: Academic Buildings, Library, Media, Union, Administration	42.0	30.4
HOUSING	108	54.0
SUPPORT: Physical Education Buildings, Arena, Auditorium, Continuing Education, Physical Plant	42.5	30.9
	192.5	115.3

Invariable land requirements, such as parking and physical education fields, constitute a major portion of the total land area requirements. These are:

PARKING	90.0 acres
MEN'S PHYSICAL EDUCATION FIELDS	69.8
WOMEN'S PHYSICAL EDUCATION FIELDS	32.5
GOLF COURSE	125.0
STADIUM	25.0
ARBORETUM	10.0+
	352.3

This constant land requirement, plus the variable building area requirements, indicates that the campus will occupy from 544.8 acres at the lower density development to 467.6 acres at the higher density. As pointed out previously, approximately 484 acres are available for development. Should a density between these two limits be implemented, the present acreage would theoretically be adequate.

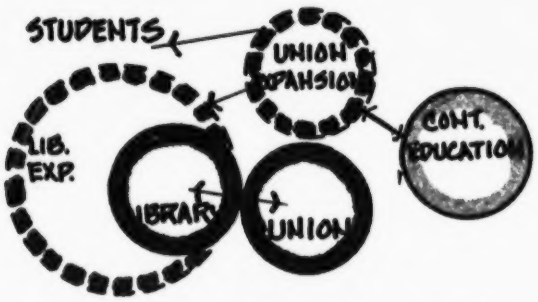
The location of the physical education fields and golf course will determine the need to acquire additional land. Should all of the physical education fields be developed on the west, additional land in that area would be required. In each of the four concepts, it is proposed that the golf course be located on the south properties. If physical education is also situated south, the purchase of additional land in that area would be necessary.



DENSITY MATRIX

	BUILDING AREA: GROSS SQUARE FEET REQUIRED	DENSITY: LAND AREA REQUIREMENTS .5	1.0	1.5	2.0	ACRES REQUIRED AT PROPOSED DENSITY
EDUCATION	182,000	364,000	182,000	121,000	91,000	4.2- 2.8
BUSINESS/BEHAVORIAL SCIENCE	228,000	456,000	228,000	150,000	114,000	5.3- 3.5
NATURAL SCIENCE	268,000	536,000	268,000	177,000	134,000	6.1- 4.0
FINE ARTS	318,000	636,000	318,000	212,000	159,000	7.2- 3.7
PHYSICAL EDUCATION	445,000	890,000	445,000	x	x	20.4-10.2
LIBRARY	436,000	871,000	436,000	290,000	218,000	6.7
MEDIA CENTER	87,000	174,000	87,000	58,000	43,500	1.5
SINGLE-STUDENT HOUSING	1,300,000	2,600,000	1,300,000	870,000	610,000	60.0-30.0
MARRIED-STUDENT HOUSING	1,040,000	2,080,000	1,040,000	694,000	520,000	48.0-24.0
UNIVERSITY CENTER	206,000	412,000	206,000	137,000	103,000	4.7
CONTINUING EDUCATION	160,000	320,000	160,000	106,000	80,000	3.8- 2.4
AUDITORIUM	100,000	200,000	100,000	66,000	50,000	2.3
ARENA	210,000	420,000	210,000	140,000	105,000	5.0
ADMINISTRATION	163,000	326,000	163,000	108,000	81,500	2.5
PHYSICAL PLANT	240,000	480,000	240,000	x	x	11.0

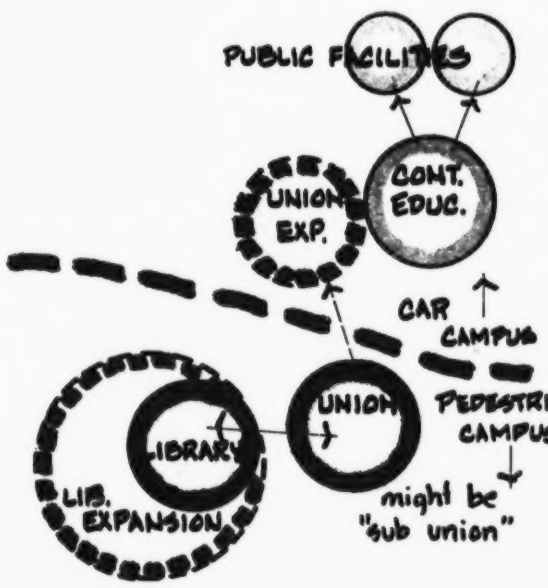
University Union: Development Considerations



1. expansion in place

will it pull cont. ed. to it?
if so: also other public related facilities
cars
but: regular academic facilities can be used for cont. ed.

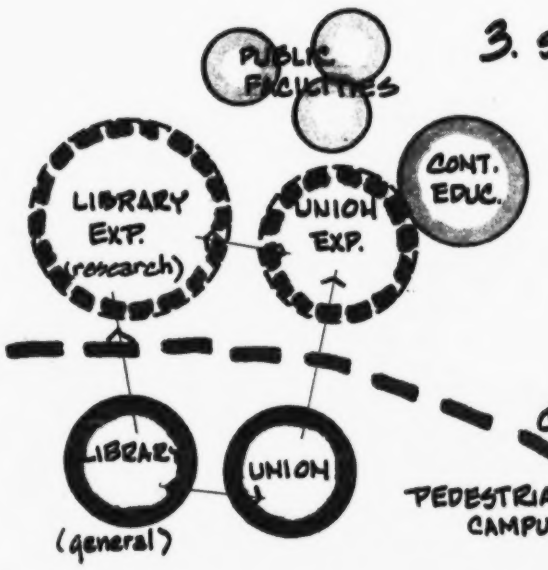
basic concept - integration with library orientation to student academic traffic
expansion - to also serve public, cont. education



2. separate union expansion

could combine with Cont. Educ. function
could absorb car generating activities
might become main union

but would divorce Library from public & car oriented activities

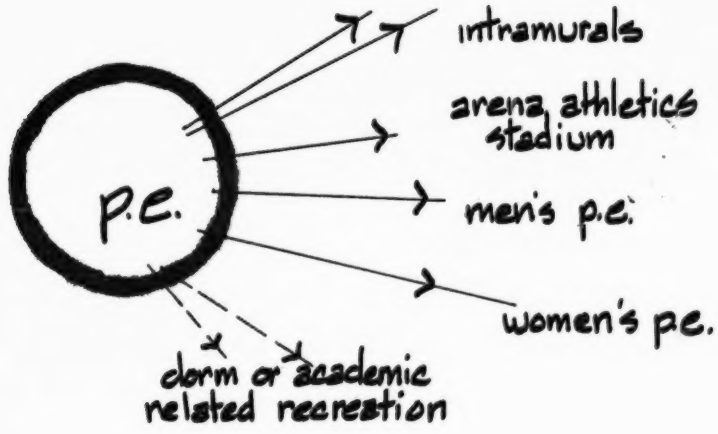


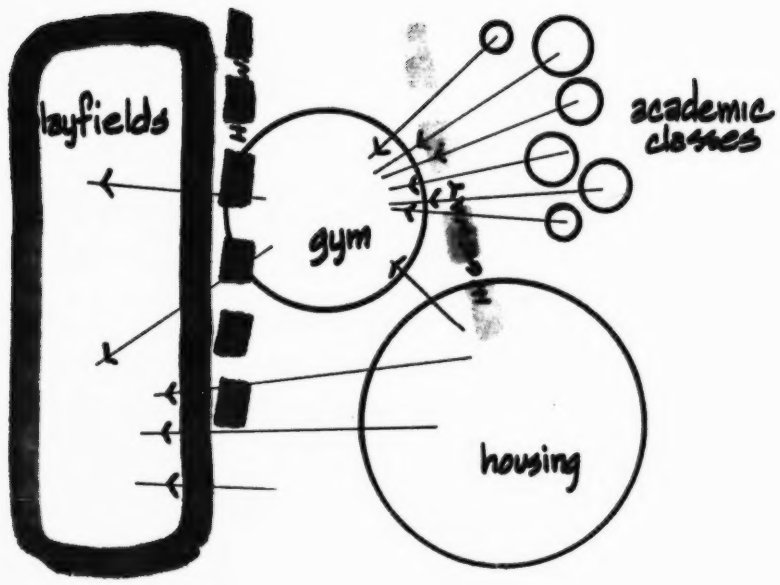
3. separate center

might lead to separate upper or grad divisions

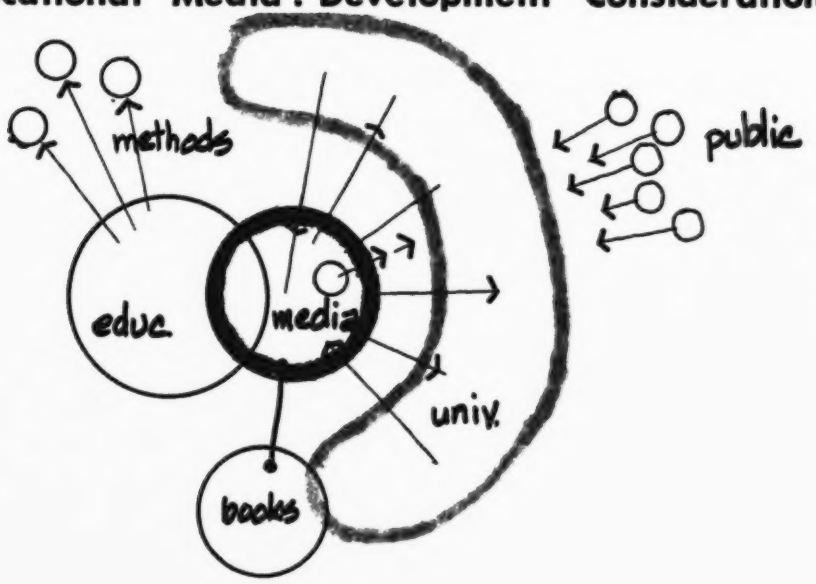
allows greater expansion & integration of "University" research & community service programs

Physical Education: Development Considerations

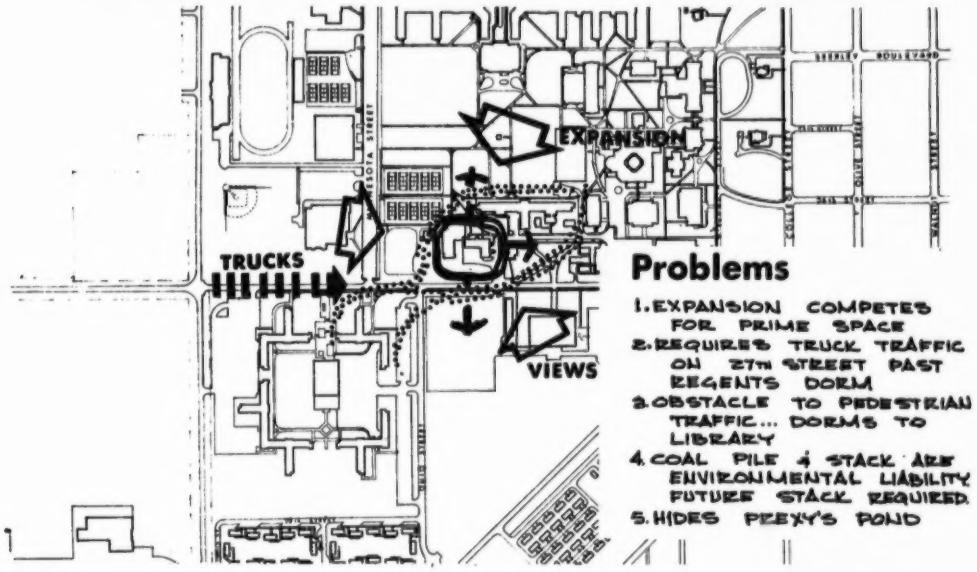




Educational Media : Development Considerations

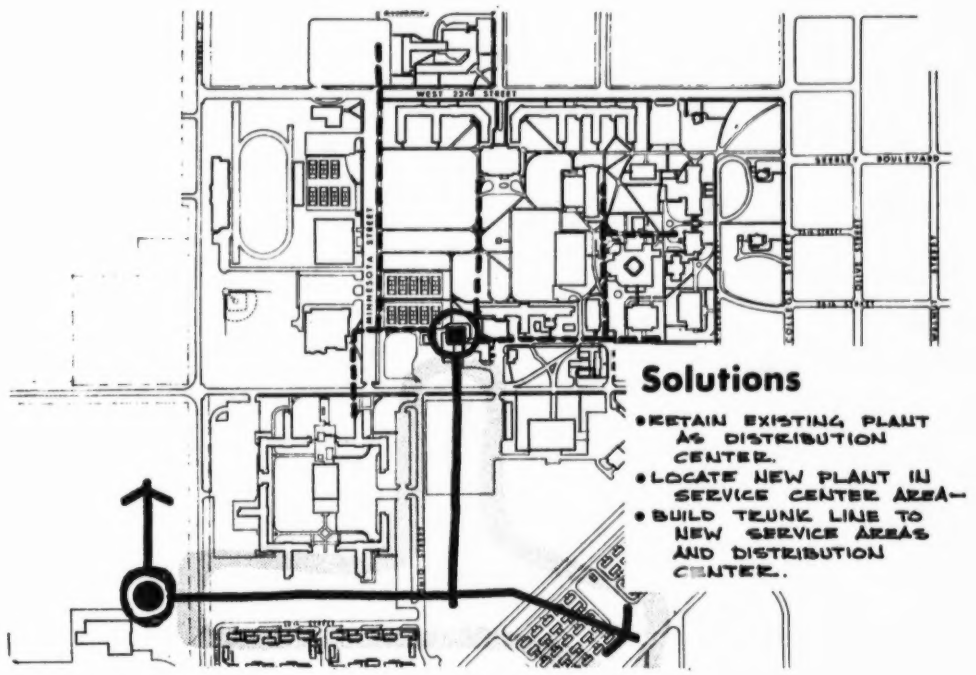


Heating Plant: Development Considerations



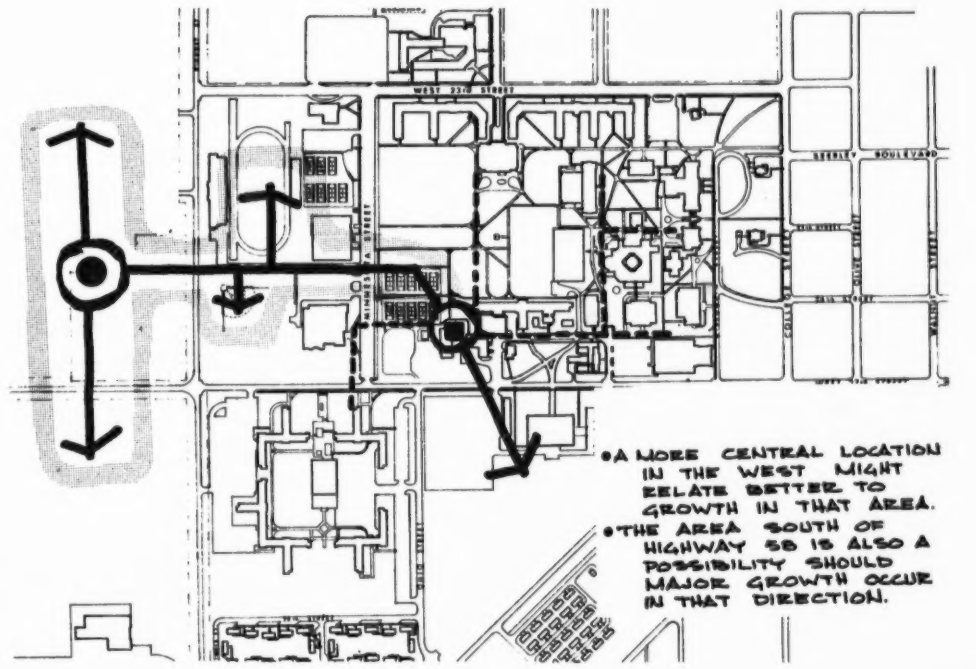
Problems

1. EXPANSION COMPETES FOR PRIME SPACE
2. REQUIRES TRUCK TRAFFIC ON 27th STREET PAST REGENTS DORM
3. OBSTACLE TO PEDESTRIAN TRAFFIC... DORMS TO LIBRARY
4. COAL PILE & STACK ARE ENVIRONMENTAL LIABILITY FUTURE STACK REQUIRED
5. HIDES PEEVY'S POND



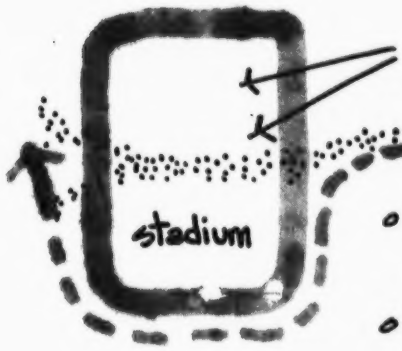
Solutions

- RETAIN EXISTING PLANT AS DISTRIBUTION CENTER.
- LOCATE NEW PLANT IN SERVICE CENTER AREA—
- BUILD TRUNK LINE TO NEW SERVICE AREAS AND DISTRIBUTION CENTER..

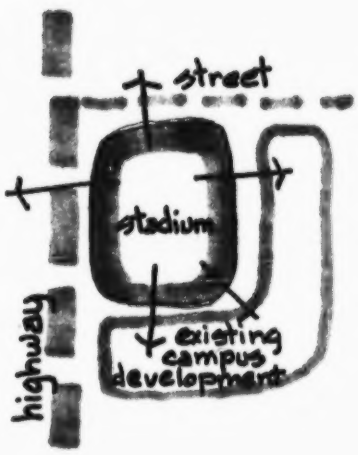


- A MORE CENTRAL LOCATION IN THE WEST MIGHT RELATE BETTER TO GROWTH IN THAT AREA.
- THE AREA SOUTH OF HIGHWAY 58 IS ALSO A POSSIBILITY SHOULD MAJOR GROWTH OCCUR IN THAT DIRECTION.

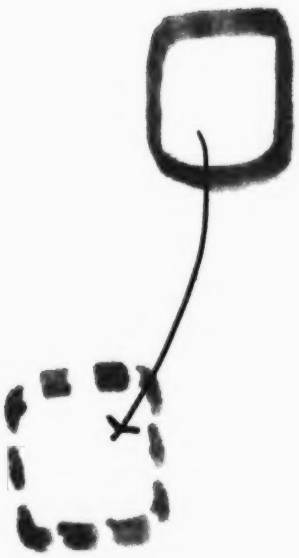
Stadium: Development Considerations



- infrequent use facility occupying prime core space
- functional relationship to P.E. unnecessary



- expansion of stadium limited by surrounding development
- existing investment small in relation to long range needs
- further expenditures at this site may require greater expense in the future when move becomes necessary



- for optimum campus development it is desirable that stadium be moved
- stadium could remain on interim basis until move is financially feasible
- new funds should initiate new stadium development planned for ultimate needs
- location should be on edge of campus to eliminate recurrance of existing problem relating to future expansion of academic and support facilities

ALTERNATIVES: FOUR CONCEPTS

The study of alternatives for development of the program produced four basic concepts. The diagrams are opposite abstractions of these concepts without the constraints imposed by existing facilities and the configuration of land available for development.

Compact Campus

The compact campus is typified by a highly concentrated academic core, around which supplemental facilities such as housing, physical education playfields and public-oriented facilities would be located. This type development would be compact, dense and highly urban, resulting in an ideal pedestrian campus. It would be best suited to a situation where variables are limited and when the projected program is considered terminal.

Dual Campus

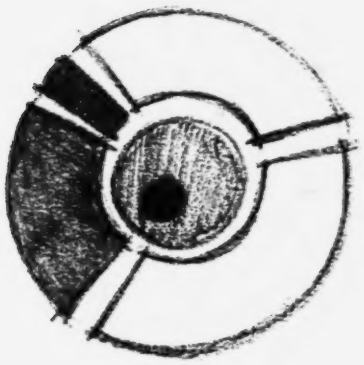
The dual campus entails the development of two compact units with a common use area between the two. The existing university would be split into two divisions, leaving one division in its original area and relocating the other. The success of this scheme would hinge upon the division of the program into two groups having little affinity for one another.

Radial Campus

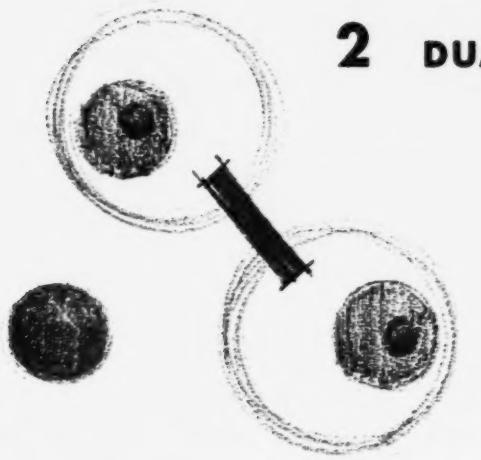
The radial campus would provide for academic growth in a diverging pattern from a highly concentrated core support area. Between the lines of academic growth, the various supplementary facilities such as parking, public facilities, university housing, and physical education and athletic fields would be developed. This solution optimizes the possibility of integration of all facilities, and provides the opportunity for vehicular penetration into the heart of the campus with a minimum of conflict.

Linear Campus

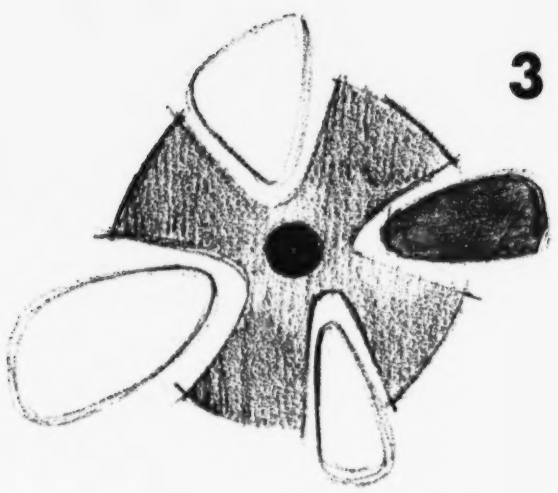
This concept integrates the different uses to a maximum degree and puts few constraints on growth. Growth occurs primarily by leapfrogging adjacent development. Pedestrian circulation would be along a spine, or main avenue, connecting the components of the campus that are stretched out in a linear fashion. This represents an almost complete dissemination of uses with less regard to their relationships.



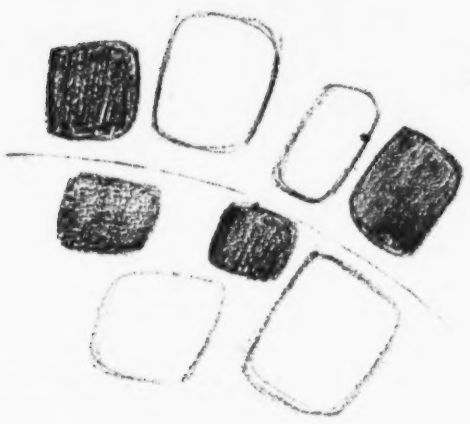
1 COMPACT



2 DUAL



3 RADIAL



4 LINEAR

CONCEPT 1: COMPACT CAMPUS

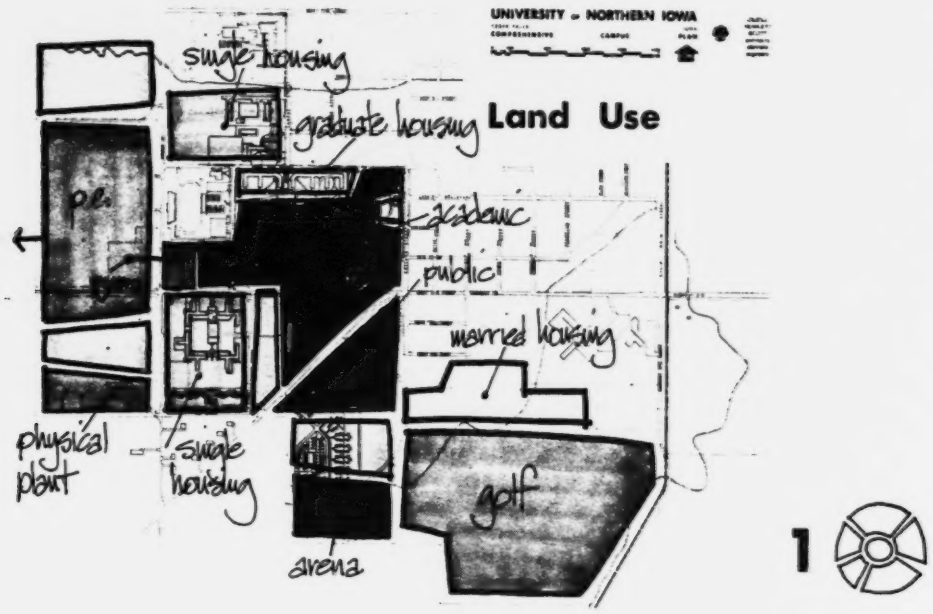
In this concept academic growth would take place around the existing academic core, growing west to Minnesota Street and filling in the area between 27th Street, Highway 58 and the Regents Dormitory complex. Growth of single-student housing would be limited to the area adjacent to the Towers and in the Regents complex area, probably including the Towers within this complex. As shown on the density map, this would result in considerably higher densities than now exist. Public facilities would be concentrated in the area south of Highway 58. Physical Education would bridge Highway 57. Its location on the west would require that additional land be acquired in order to satisfy the programmed requirements for field area. The existing golf course could become excess property. In this scheme, all of the four colleges would be located within the central academic area. However, the disciplines in each college would not necessarily be grouped together.

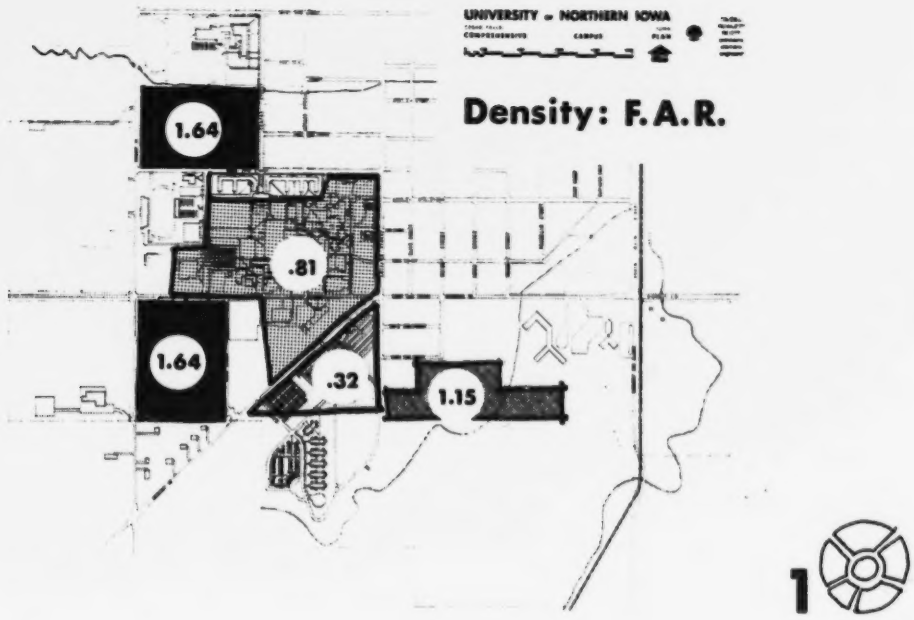
This concept is efficient in that there is a maximum use of existing facilities in the academic core. It is of an urban, high density type development and an optimum pedestrian campus. The concentration of public facilities adjacent to the academic core provides for convenient access from this core as well as convenient and centralized access from the community. There are good functional relationships between housing and Physical Education and between the Library-Educational Media and instructional facilities. By surrounding the academic area with development, growth potential is limited. However, the stadium could remain on an interim basis as an area for later expansion.

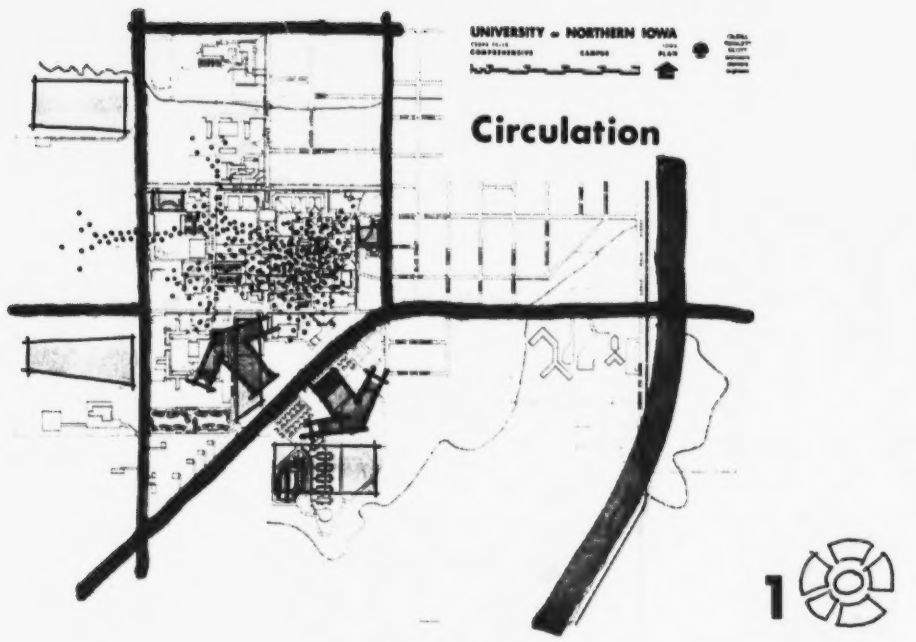
Development of this concept depends upon achieving maximum densities in all future construction. Because of the existing high Ground Area Coverage and low Floor Area Ratio on the campus, the projected overall Floor Area Ratio of .81 could only be accomplished if a majority of future construction were of a high-rise type.

Two entrances would be taken from Highway 58. One would serve the academic area and the other would serve public facilities south of the highway. Pedestrian circulation for the academic area would be within that area now developed, with the exception of Physical Education west of Highway 57.

There are probable fewer alternatives to the arrangement of facilities in this concept than in the other three. It would be possible to interchange the location of physical education facilities, public facilities and married-student housing. In the event that additional land could not be acquired on the west, this might be considered.


UNIVERSITY of NORTHERN IOWA
Land Use
single housing
graduate housing
p.e.
academic
public
married housing
physical plant
single housing
golf
arena
1


UNIVERSITY of NORTHERN IOWA
Density: F.A.R.
1.64
.81
1.64
.32
1.15
1


UNIVERSITY of NORTHERN IOWA
Circulation
1

CONCEPT 2: DUAL CAMPUS

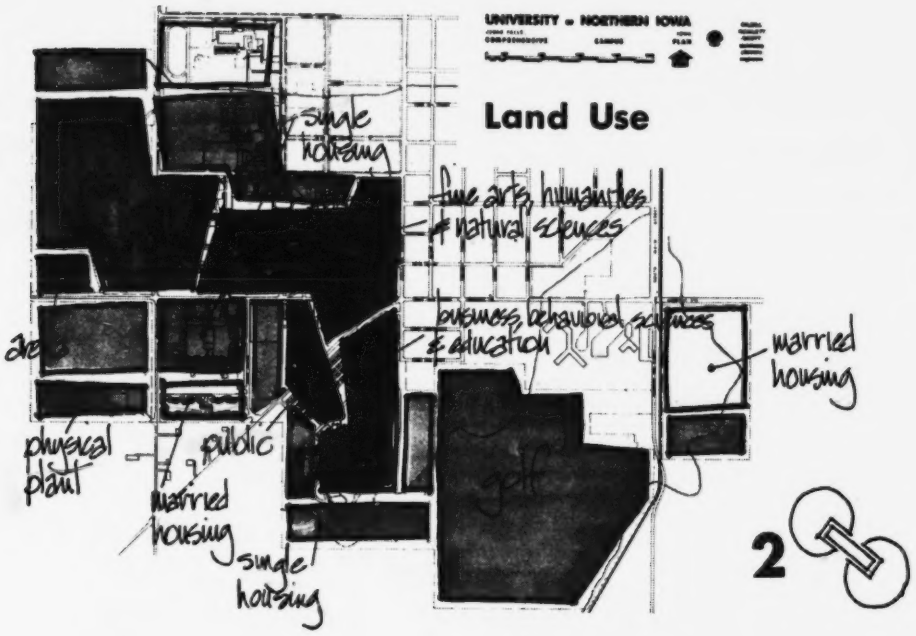
This concept has as its basic idea the establishment of a second academic campus south of Highway 58. The university would be divided either in the manner shown or in some other suitable way. Each academic area would have its own student union and library. Further expansion of these facilities would occur in the academic area south of the highway, while the existing facilities would serve the present academic area. Except for the replacement of obsolete facilities, the need for expanding the existing academic area would be limited. In effect, there would be two campuses of approximately 7,500 each. The existing campus would serve one group of this size, as it does today, and a new campus would be built to serve the anticipated addition of approximately 7,500 students.

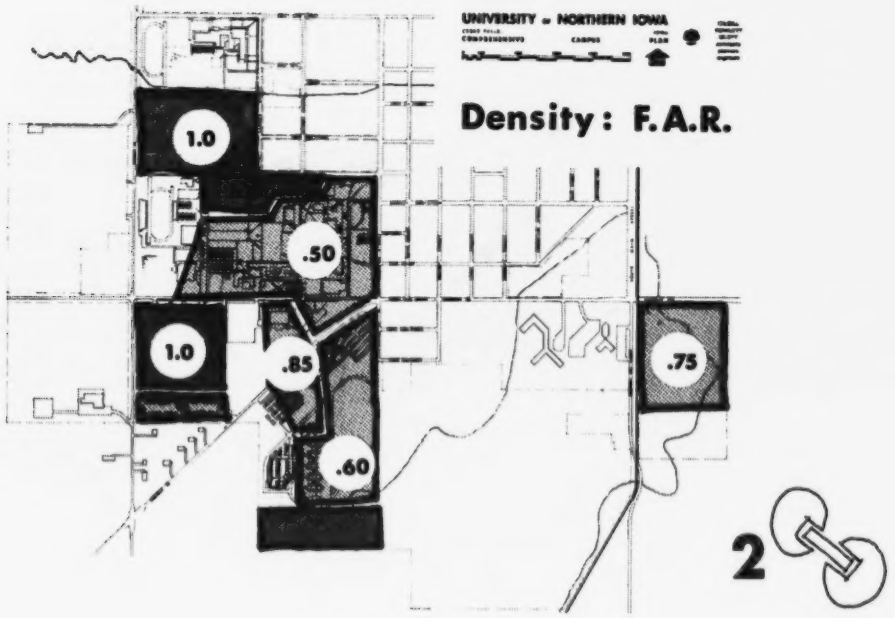
Public and common academic use facilities, including the Auditorium, Administration, Continuing Education Center and Educational Media Center, would form a link between the two academic campuses. Additional single-student housing would be planned south of Highway 58 to serve the second campus. Married-student housing would be located on the existing golf course.

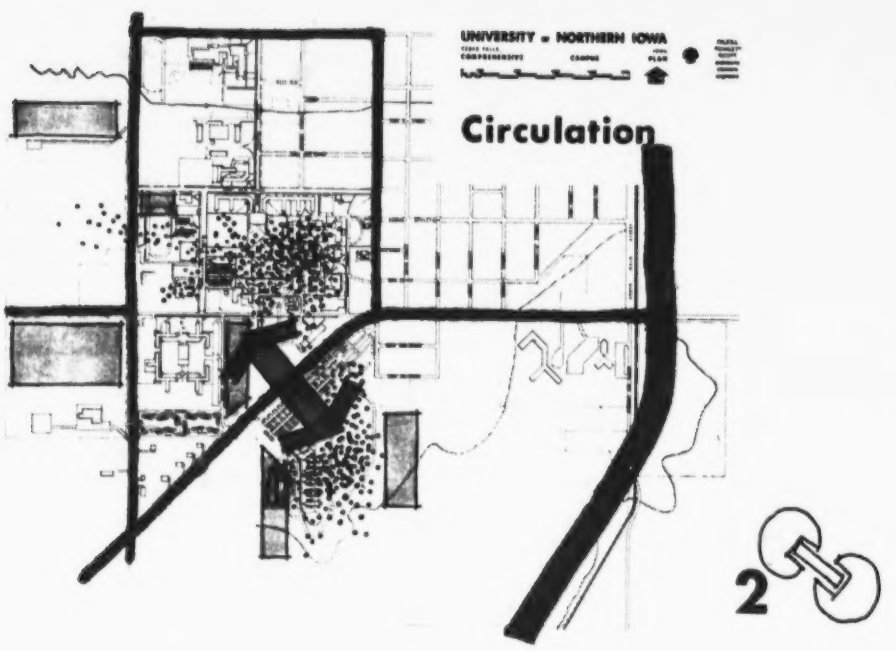
Densities in this concept would be low, allowing for optimum future expansion. The breakup of the university, although providing an optimum solution for expansion, would result in a separation of academic components. This separation may adversely affect the desire for student and faculty interaction in the university as a whole, unless special efforts were made to provide facilities in the link that would draw students and act as a university mixing bowl. The success of the scheme also hinges on the division of the university in a way that results in a minimum of academic crossover because of the extended pedestrian distances involved. Pedestrian circulation, for the most part, would be concentrated in each of the academic areas. The main vehicular entrance, from Highway 58, would provide dual access, one serving each campus in addition to the public facilities in the link.

The Stadium, although still limited in expansion possibility, could remain on its present site indefinitely. Married-student housing is most remote in this scheme; however, it is a potential use for the golf course and this location would relate well to the community. It would tend to be separated from the academic community, both by distance and the proposed freeway.

Alternatives in the concept would relate directly to the elements of the university located on each campus. The golf course and Physical Education could be interchanged, depending on the proposed location of the lower division student group. If a separation by sex were possible, Physical Education could be split, with Men's P.E. relating to one campus and Women's to the other. This is the type of alternative that could be studied. The biggest, however, is the division into two parts of the university itself.


UNIVERSITY of NORTHERN IOWA
Land Use
single housing
fine arts, humanities & natural sciences
business, behavioral sciences & education
married housing
physical plant
public
married housing
single housing
golf
2


UNIVERSITY of NORTHERN IOWA
Density: F.A.R.
1.0
.50
1.0
.85
.60
.75
2


UNIVERSITY of NORTHERN IOWA
Circulation
2

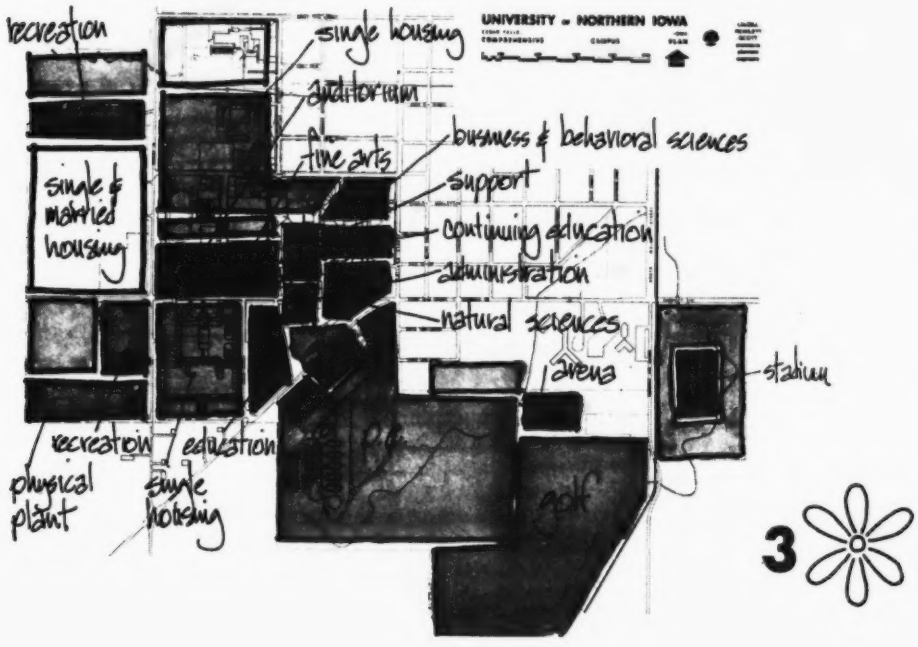
CONCEPT 3: RADIAL CAMPUS

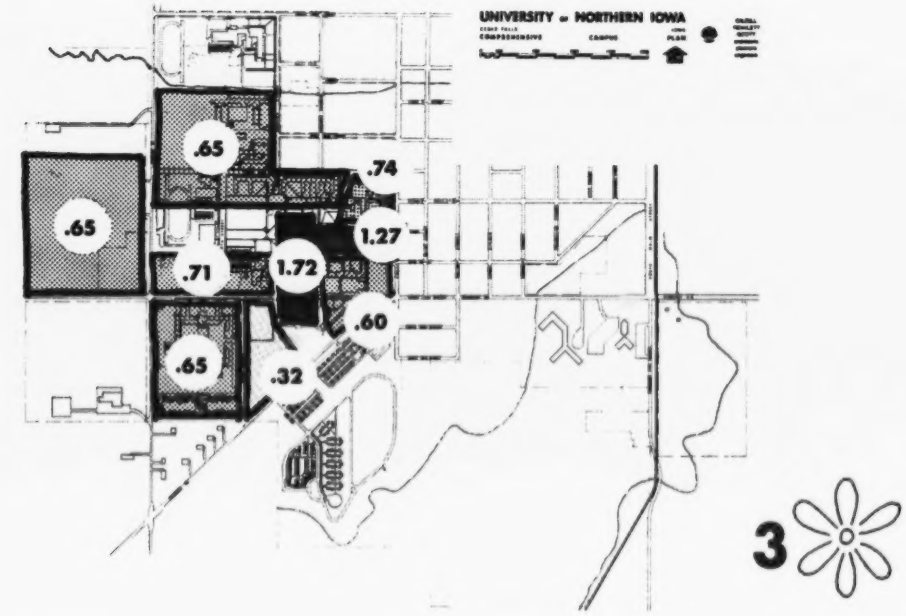
This concept envisions development of a concentrated core area consisting of the Library, university Union and Educational Media Center. From this core, the various academic and support uses would radiate and would, in the form of flower petals, provide for integration of uses with unlimited growth through the extension of these petals. Here, each of the colleges has been identified as an individual entity, yet related to the whole through the central support area. The central area would be the mixing bowl of the campus and the area in which interaction would most likely take place as the disciplines were drawn to and through the center.

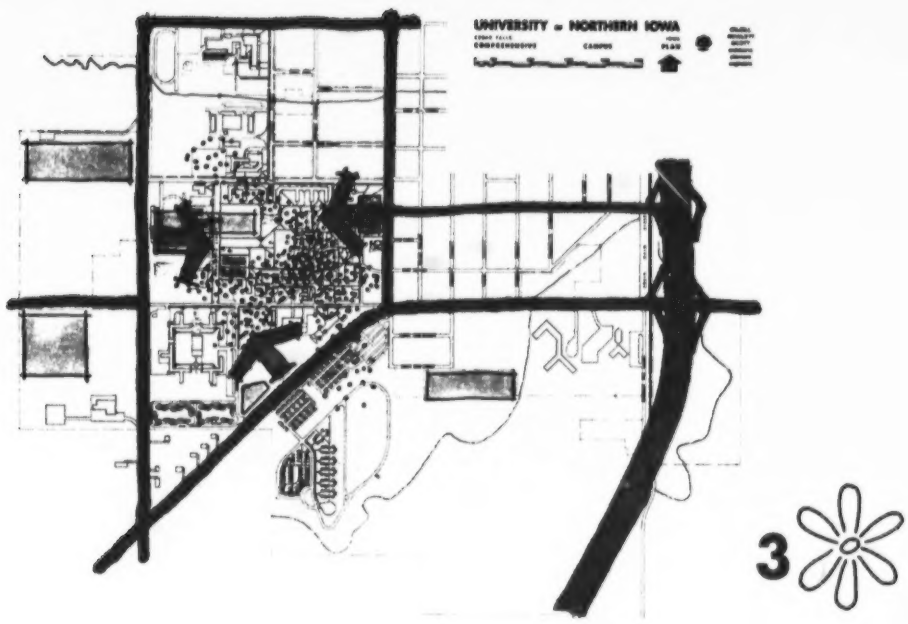
The concept would allow for an integration of the public facilities with the academic. By locating the public facilities at the extremities of the academic areas or between them, they would have optimum contact with the community. This scheme also allows for the vehicular penetration of the campus at several points, extending to the core of the campus between use areas. Basically, everything is oriented to the core, leaving a pedestrian campus with automobile penetration. Growth potentials are optimum in this scheme; Fine Arts can grow to the west, Education into the physical education fields on the south, Science could grow into the parking lot south of its proposed location, and Business, although the most restricted, could expand back toward the core or into the housing complex on the west at a later date. Expanssion may also occur in a completely new area at such time that the Social Sciences or Psychology are made a separate college.

The Stadium can remain as an interim use and, when relocated, will become an expansion area for housing and close-in parking. The scheme also proposes the mixing of married- and single-student housing on the west, providing another opportunity for interaction among two groups usually separated. This would not only optimize the use of land, but would also place married-student housing within close proximity to the academic area, making it a part of the academic community.

Alternatives to this scheme relate to the allocation of any one area to a specific college, and the exchange possible between Physical Education and housing. The Colleges of Business and Education could be switched in location, although the proposed locations seem more equitable from the standpoint of immediate needs. Physical Education could be located on the west and housing on the south.


UNIVERSITY of NORTHERN IOWA
recreation
single housing
auditorium
fine arts
business & behavioral sciences
support
continuing education
administration
natural sciences
arena
stadium
single & married housing
recreation
education
physical plant
single housing
golf
3


UNIVERSITY of NORTHERN IOWA
.65
.74
.65
1.27
.71
1.72
.60
.65
.32
3


UNIVERSITY of NORTHERN IOWA
3

CONCEPT 4: LINEAR CAMPUS

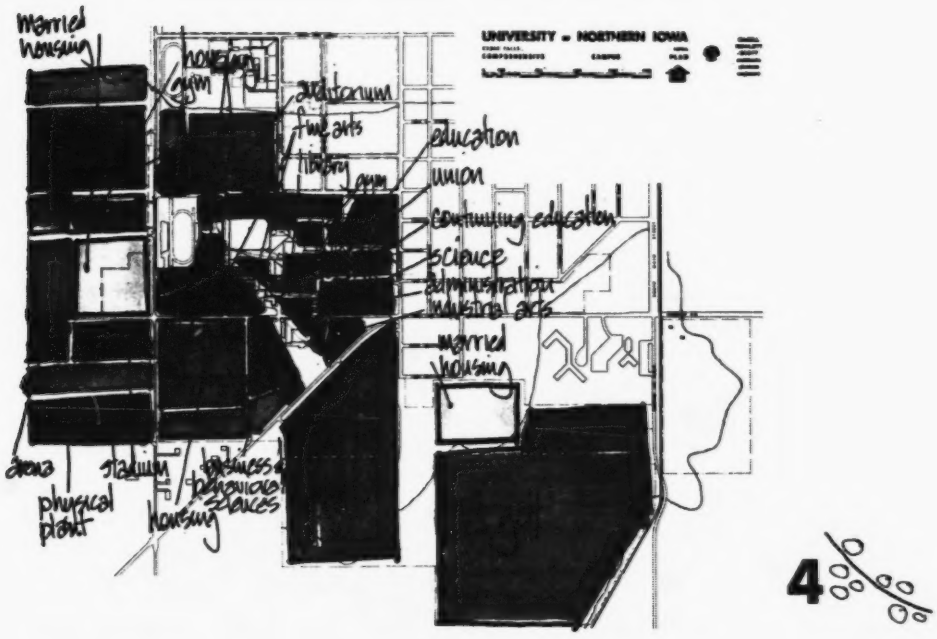
This concept provides for expansion in a continuous yet fragmented pattern. Academic expansion is held within close proximity to the existing academic area, but is highly integrated with other uses, existing and proposed. Public as well as academic uses are scattered throughout the campus, and in no area is there a concentration of any one use type. This scheme puts few constraints on expansion since growth occurs continuously in a linear form. A new building site is always available on the edge of the developed area. There is a possible choice in the relationship of public to academic facilities. They can be integrated, made a part of the academic, or separated on their own building site.

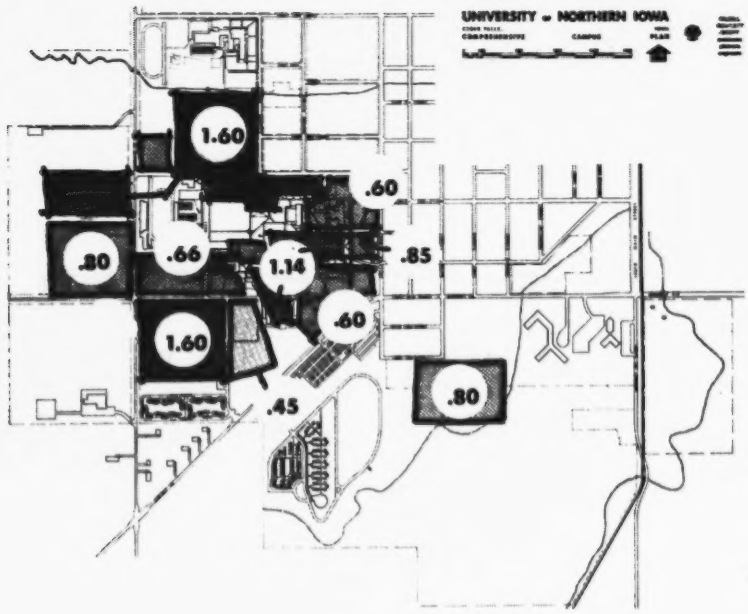
Pedestrian circulation, itself, gives the concept a basic form. Because of the dispersal of uses, it is necessary to preserve some rather direct paths for pedestrian traffic. Taking the form of an uninterrupted pedestrian avenue, they tie all of the parts together and provide convenient access to the various components. The greatest volume of pedestrian traffic would be along these avenues, and they would, if properly designed and augmented with appropriate facilities, constitute a student mixing area. Vehicular access to the campus would be through several entrances. Because facilities are scattered, one main entrance would not fulfill the need for automobile contact with all public facilities. Rather, a separate entrance would be developed to serve the facilities in various areas of the campus.

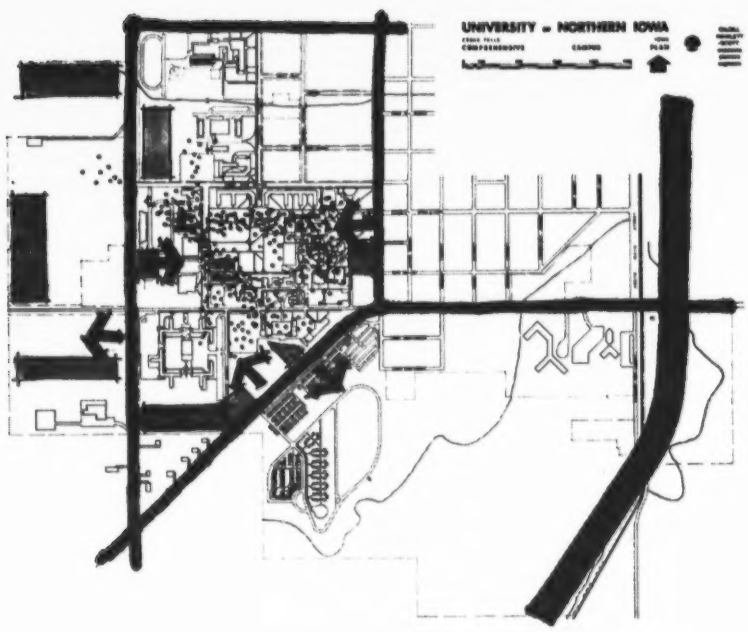
The densities shown for academic are somewhat lower than what could be achieved in this scheme. One feature of the scheme is that it allows the preservation of open space, especially as related to the pedestrian avenue, and thus could compensate for higher densities. The density in the housing area is higher than would be normally planned. However, again the distribution of open space, either for Physical Education or the pedestrian areas, would permit higher densities.

The Stadium could remain on an interim basis and, after relocation, would be expansion area for public and academic facilities. Physical Education would be split, with Women's Physical Education on the west and Men's Physical Education on the south. This split would allow the development of the programmed requirements without the acquisition of additional land.

There are any number of alternatives in this concept. Because almost all uses have their own site, they could be interchanged in any number of ways. More public facilities could be located on Highway 58, various interchanges among housing could be made, and the academic areas could take on a different configuration as uses were moved around.


UNIVERSITY of NORTHERN IOWA
married housing
new dorm
gym
auditorium
fine arts
library
gym
education
union
continuing education
science
administration
industrial arts
married housing
arena
stadium
physical plant
business & economics
housing
sciences


UNIVERSITY of NORTHERN IOWA
1.60
.60
.80
.66
1.14
.85
1.60
.60
.45
.80


UNIVERSITY of NORTHERN IOWA

DEVELOPMENT CONCEPT EVALUATION CRITERIA

The following are criteria generated by the program to which future development concepts should in some way respond. The response will not be the same in all concepts, nor will any one concept respond equally to the various criteria. The university might weigh each criterion, establishing a priority by which each concept can be judged. The university may also wish to supplement the criteria with additional points important to its overall role and scope. The following were selected as being those most reflecting the objectives of the university.

Growth

Expansion beyond 15,000

Academic Development

Eventual growth and division of the initial four colleges.

Role and Scope

Emphasis on teacher education

New Programs

Expansion for possible new programs not presently available at the university.

Affinities

Satisfy the basic affinities outlined in the program.

Research

Encourage the development and growth of research at the discipline and college level, through the establishment of good relationships between physical facilities and expansion possibilities.

Campus Life

Stimulate intellectual and social interaction among faculty and students.

Community

Development of the university as the educational-cultural center of the community.

Circulation

Plan for a pedestrian campus, yet provide for convenient automobile access to public facilities.

Parking

Satisfy parking requirements and regulations as outlined in the program.

Phasing

Respond to the problems inherent in expansion of an existing campus.

Efficiency

Minimize duplication of space and services.

College and Discipline Identity

Acknowledge disciplines, but allow identification with broader units such as the colleges and general university.

University Identity

Identification of the university as a unified academic entity, with emphasis on teacher education and public service.

LANDSCAPE ANALYSIS

The problem of landscaping the campus becomes one of maintaining a continuity of buildings and open spaces through the proper selection and placement of trees, shrubs, and ground covers. Many plant materials in these three classifications may be found in the Iowa area. This section of Iowa, with its level to gently rolling topography, is typical of the central prairie sub-region of the Midwest. The soils of the region are very fertile and productive.

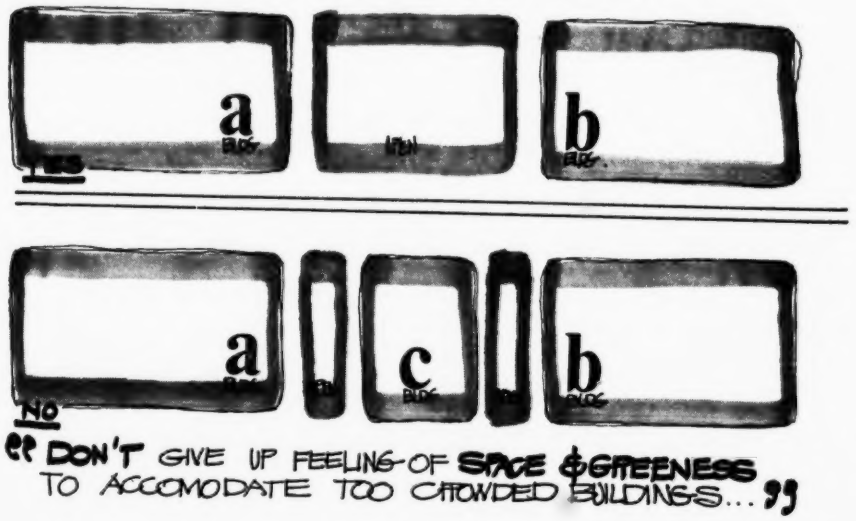
The climate of Iowa is fairly stable. The primary heavy moisture period runs from April through September with periods of heavy snow picking up in December and going through March. The average temperature range is from 18 degrees to 74 degrees, with periods of extreme cold coming in December, January and March, and extreme heat in June, July and August. Summer breezes primarily come from the south, but do range from the southeast to the northwest with breezes from the south to northwest.

One problem on the campus is that the large number of Elm trees are falling victim to the Dutch Elm Disease. The massive Elms have helped to unify the campus. Unfortunately, the shrubs throughout the campus, unlike the trees, have been placed with little thought to form or function. The paved walkways also constitute a large percentage of the campus cover. At present, many of the walkways are too narrow to adequately carry traffic volumes. Due to expansion, new walks have been added, creating odd angles, triangles and intersections. Pedestrian conversation areas have been placed adjacent to or in the middle of narrow walks, thus creating "walkblocks."

Groupings and spacing of trees generally are very good. With some minor exceptions, existing trees and shrubs have been of species and varieties that do well in the area. Large, open lawn areas at the campus perimeter present a pleasant park-like atmosphere. Plantings related only to individual buildings tend to form micro-sites, detracting from campus unity. Vistas should be framed, views closed off, or pedestrians routed with plant groupings.

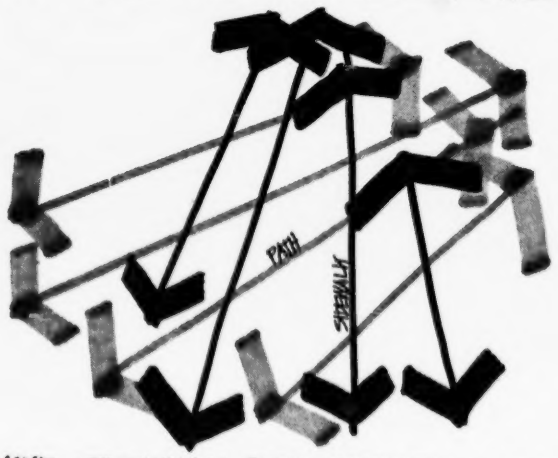
In general, the campus landscape has become out of date with the current needs. When buildings are planned, the walks and open spaces between them should be designed with the campus as a whole in mind.

STUDENT SURVEY: CAMPUS ENVIRONMENT



"DON'T GIVE UP FEELING OF **SPACE & GREENESS** TO ACCOMODATE TOO CROWDED BUILDINGS..."

STUDENT SURVEY: SIDEWALKS



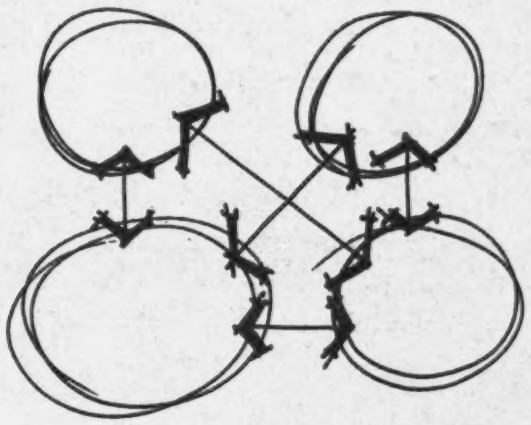
"MAKE SIDEWALKS **CONVENIENT** FOR STUDENTS" ELIMINATE "CUT-ACROSS" PATHS.....

STUDENT SURVEY: SIDEWALKS

"**SIDEWALKS** NEED TO BE **WIDER** TO HANDLE TRAFFIC"

Architectural Analysis

The change from a single-purpose teachers college to a multi-purpose university requires separation into divisions. However, it is necessary to retain unity with a strong emphasis on communication among disciplines.



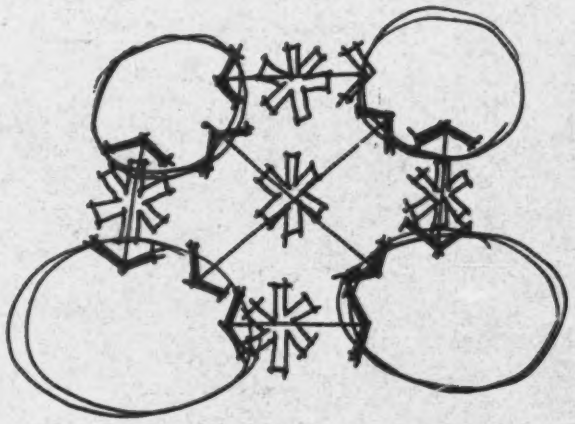
Communication points can be established;

physically, by connections between disciplines;

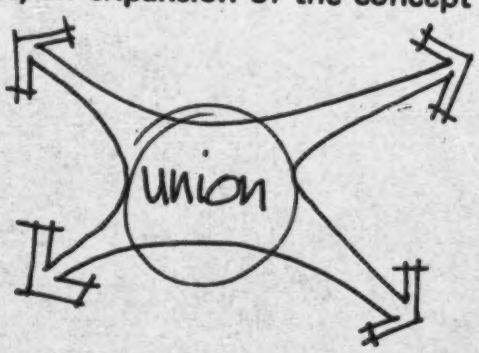
intellectually, by controlling the function of the spaces defining the connections.

For example:

Debate/exhibit area between media center and library.
Snack bar associated with commons
Graphic and sculptural display with fine arts
Museum with natural sciences
Forum with graduate center



This is, in effect, an expansion of the concept of the new university Union.

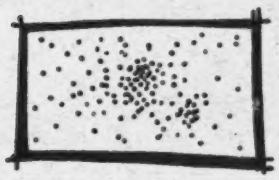


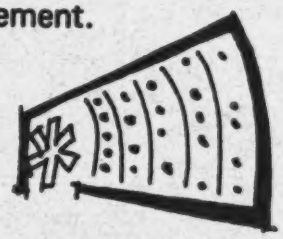
Three levels of communication, identity, and involvement should be established:

Group – general identification and involvement in total university with limited communication.

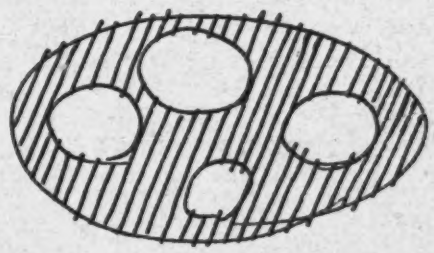
Sub-group – one-way communication with limited involvement.

Individual – two-way communication with social and intellectual involvement.

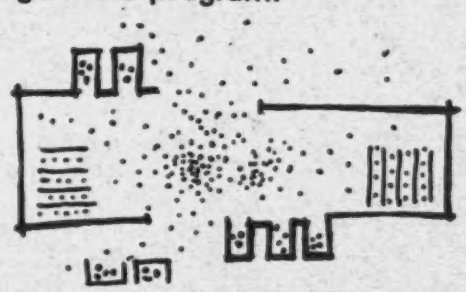




The disciplines remain part of the university structure;

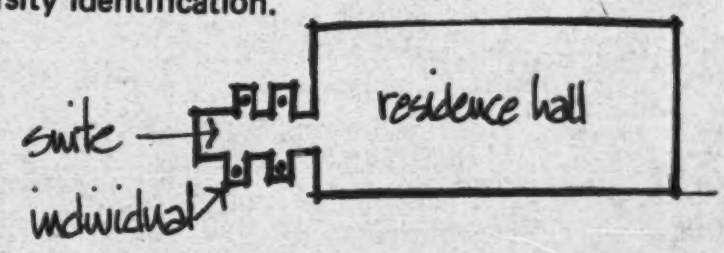


and include **involvement** at three of their own levels, with the emphasis at each level varying according to the program.

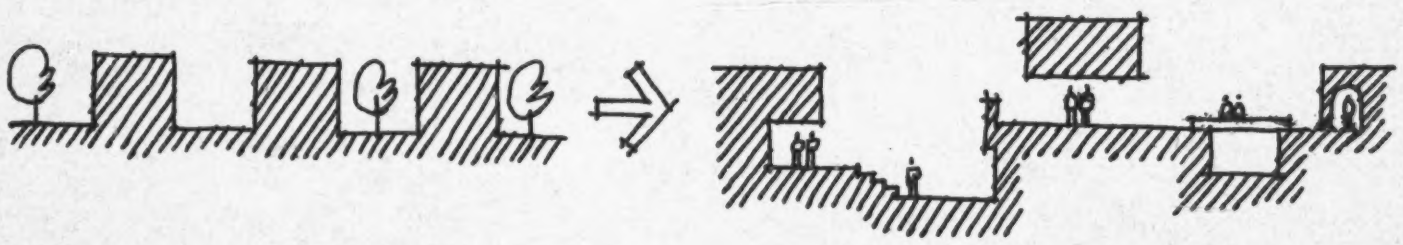


Groups and sub-groups can be broken out and included in linking spaces.

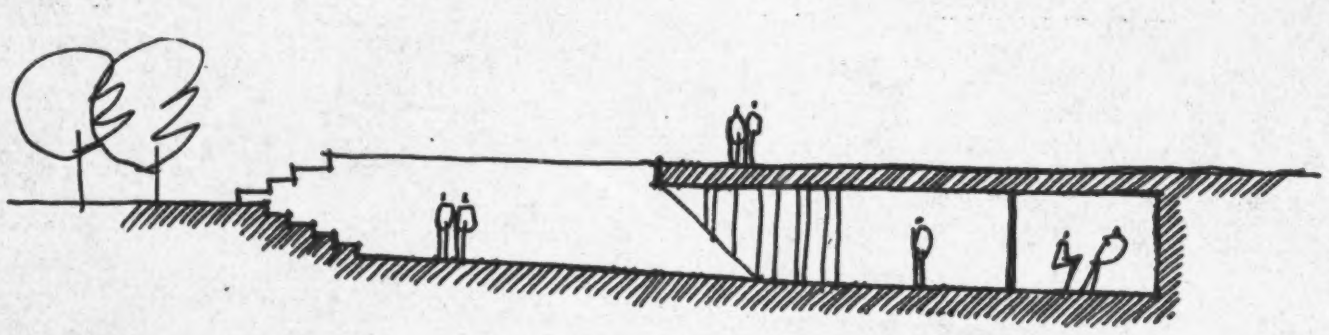
Small group identity is missing in existing residence halls. Group involvement can be accomplished by establishing a **suite system**, recalling the three-level hierarchy of university identification.



There is a strong direction at the University of Northern Iowa toward open spaces. However, these open spaces are seldom defined. Rather than spaces which become a part of the total environment and contribute to the understanding of the circulation between and around buildings, the spaces are too often fields divided by wall-buildings. Building and open space should combine and mix to form transitional space between outside and inside. Rather than being separate entities divided by air, the buildings become a part of the **total university environment.**

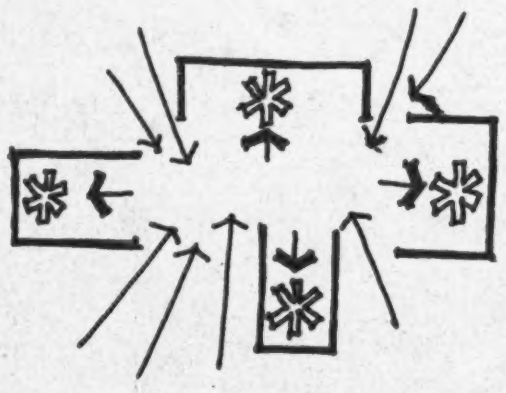


There is more than inside and outside:

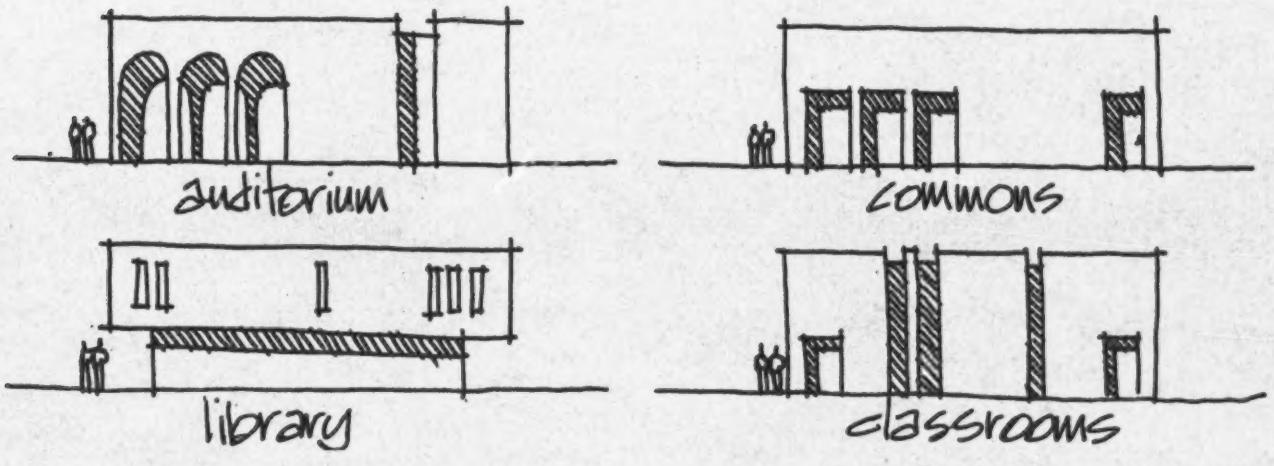


Directional spaces and focal spaces can be combined in a studied sequence to provide **orientation** and **significance** to a space or a series of spaces.

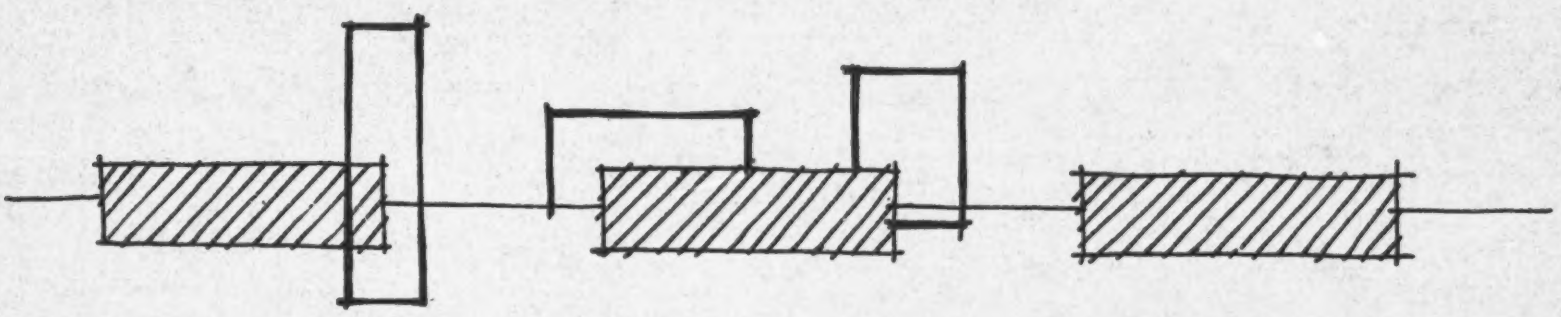
Variation of spaces can provide a hierarchy defining density and importance.



Buildings located by hierarchy of function should respond architecturally to their program and site. The hierarchy is defined more by relative **scale** and **proportion** than by relative size.



Density and orientation can be controlled by placement and proportion of additional buildings and complexes. A variety of three-dimensional spaces should be developed to define and enhance the total environment.



An important aspect of **scale** is material selection on both horizontal and vertical planes. The traditional brick in use on the campus is an excellent scale-giver, but should be more consistent in color and texture.